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ABSTRACT

This book offers three things to university trustees: (1) a review of scholarly work in capital market theory, (2) a manual for those who must manage managers, and (3) a clear statement of broad injunctions of prudences that scholars and practitioners have long put into jargon. The first section covers policy and strategic issues, including: the trustee role, the importance of setting the risk level for the portfolio, determining portfolio composition, method of selecting securities for the portfolio, and controlling turnover. An investment policy questionnaire is described, and day-to-day portfolio management is discussed. It is shown that investment philosophy is the decisive factor for endowed institutions. Appended are a statement on the risk-return tradeoff and its applicability to endowment management, and a consideration of investment options, including U.S. equities, non-U.S. equity investments, fixed-income investments, nonmarketable investments, and special situations. (LBH)

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Managing Risk in an Uncertain Era

An Analysis for Endowed Institutions

Burton G. Malkiel
Paul B. Firstenberg

Foreword by
Roger G. Kennedy

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Managing Risk in an Uncertain Era

An Analysis for Endowed Institutions

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Foreword

No new trustee wants a five-foot shelf of books to read before he or she can comfortably assume his or her duties. But to the six-inch bookshelf a trustee does want, this work (about one-half inch, I find) should certainly be added.* It is like no other, and for it there is no substitute. It is admirably unique because it is three things at once:

1 A review of scholarly work in capital market theory, some of which is new and some of which has not been taken sufficiently seriously even though ripened long ago;

2 A manual for those who must actually practice the arduous and baffling profession of managing managers;

3 A statement in plain English of broad injunctions of prudence which scholars and practitioners have long put into languages neither of which were wholly comprehensible to each other or to trustees.

Because I can add nothing, I would only ask the reader to share my delight in the trenchancy with which these writers unfold for us the story which leads from objectives through policy to risk acceptance and finally to strategy and tactics. Once trustees decide what will be the task to which they set their endowment, all else follows. If that endowment is merely to provide ornament for a grand educational program funded by a generous legislature, munificent alumni, or student fees, then that endowment may be managed, if the trustees so desire, at relatively high risk.** Its losses will not bite into fundamental programs and, if the risks yield commensurately high rewards, an unexpected fillip may be given the educational process. There are trustees who have, in these circumstances, adopted just such an investment program, and from this self-definition has flowed a policy of accepting the risks required to achieve high rewards, and tactics consistent with that strategy.

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* I suggest its companions to be: **Funds for the Future: Report of the Twentieth Century Fund Task Force on College and University Endowment Policy** (New York: McGraw-Hill Book Co., 1975); William L. Cary and Craig B. Bright, **The Developing Law of Endowment Funds: 'The Law and the Lore' Revisited** (New York: The Ford Foundation, 1974); Advisory Committee on Endowment Management, **Managing Educational Endowments: Report to the Ford Foundation**, second edition (New York: The Ford Foundation, 1972) with supplement, 1975; Roger G. Ibbotson and Rex A. Sinquefield, 'Stocks, Bonds, Bills, and Inflation: Year-by-Year Historical Returns (1926-1974),' **The Journal of Business of the University of Chicago**, vol. 49, no. 1, January 1976, pp. 11-47; J. Peter Williamson, **Performance Measurement and Investment Objectives for Educational Endowment Funds**

(continued on next page)

** They will move out along the investment spectrum from U.S. government obligations (which have no credit risk) of longer maturities than one day (and thus assume interest rate or maturity risk) toward equities which have higher volatility than fixed-income securities.

(New York: The Common Fund, 1972). Some of these publications received Ford Foundation support and some did not. The Malkiel and Firstenberg report was made to Princeton University, not to the Foundation, though the Foundation will assist in its distribution. To be sure the disclaimers are complete, I should say that my own remarks in this Foreword are not Ford Foundation views, but my own. I'm sure that some of my colleagues might put the emphasis differently and even disagree from place to place. That would not be unusual.

But if the endowment must produce the bulk of the resources necessary to sustain the institution, if it must yield bread, milk, meat, potatoes, sugar, and salt, and not merely maraschino cherries, then a much lower risk is required. From lower risk will come, these authors remind us, lower but more predictable returns. Trustees who follow these authors' injunctions will insist upon an unequivocal statement from their managers of what they mean by 'lower risk.' They will expect a statement of the relative long-term rates of return their managers think can be achieved with each proposed risk level, and what that risk level means in policy. By 'policy' many trustees will mean, in this context, portfolio mix between equities and fixed-income securities. They will then ask for definition of strategy within each of these broad classes of securities and how the selection of individual securities (tactics) will be carried on.

There are two large educational institutions on the eastern littoral: one expects to get a third of its annual expenditure needs from gifts from alumni, and the other expects less than 10 percent. They have budgets which call for identical percentages of their endowments to be disbursed. Messrs. Malkiel and Firstenberg help us to understand that the latter must, by setting so high a percentage distribution, require its managers to seek higher rewards and take higher risks than those engaged by the former. Among the other implications of this choice may be these: less certainty in future educational capacity, a higher proportion of equities in their portfolio, a strategy of innovation or concentration, and, possibly, investment in equity securities issued by corporations having lower net worth or longer waiting time before dividends will repay the original investment.

These implications for strategy and tactics all are the progeny of the union of investment policy and budgetary objectives. There is plenty of room for debate about tactics, as these authors make clear, but very little doubt that trustees light a very long chain of powder when they stipulate budgetary policy and its Siamese sibling, risk level.

There is a solemn ineluctability in this sequence. There is no avoiding the shock of disappointment in bad times if budgetary objectives and risk levels are set high. All the prestidigitation of performance comparisons cannot disguise the raw fact: you get what you pay for. You will pay in high risk, and deep disappointment in bear markets, for that ebullience you get in prosperity. As these writers help us better to understand, there is no sustained record of any major endowment having suffered only the pleasures and none of the pains associated with the risk level ordained by its budgetary policy.

A final word about pleasures and pains: These authors show us a way to avoid the shocks and bruises which come of the jostling of professional managers and trustees who have not defined the objectives and policies of the fund and also their respective roles in the investment process. Malkiel and Firstenberg describe how those roles can be chosen, and also provide a questionnaire which, when used as a quarterly liturgy, can keep the roles clear by differentiating who asks and who answers what. Nothing in this book can avoid more pain than its aid to unequivocal definition of what trustees want of others and what they want, themselves, to do.

Injunctions about the overwhelming importance of managing risk in forming investment policy may seem terribly obvious after the difficult investment experience of the last few years. But there will be a day, perhaps, when all trails seem again to lead upward, when normalcy again seems to provide success without strain, when investors seem to stand again at shadow-free high noon. Then we will be fortunate to have a well-thumbed copy of Malkiel and Firstenberg in our pockets.

Roger G. Kennedy
The Ford Foundation

To Harvey Molé and the past and present members of Princeton's Trustee Investment Committee whose foresight helped to build the University's educational endowment.

Introduction

America, together with all the world's industrialized economies, has witnessed in recent years the coexistence of sharp, seemingly deeply ingrained inflation and severe recession. None of the existing modes of monetary and fiscal policy seem capable of dampening objectionably high inflation rates without producing a harsh decline in the level of economic activity. At the same time, a quintupling of the international price of oil and the rising power and wealth of the oil exporting countries are new factors with which prevailing policy is only beginning to cope.

Sitting in the eye of the storm it is unclear where the outer boundaries are or in which direction the storm is moving. This period may give way to one of stable prices and sustained real growth, or there may be a new economic era in which both conditions and policies will be markedly different from those in the past. Only history will confirm which projection of the future is accurate.

Managing investments in such uncertain times challenges not only one's steadiness and nerve but also one's ability to perceive the unfolding pattern of economic trends. In the face of the fluidity of events, investment managers must develop a consistency of policy and style, geared to long-term results, which is at once amenable to changing conditions and yet resilient enough to resist passing fads and pressures of the moment. The art of investment management clearly faces a period of severe testing. This volume was written in an effort to try to come to grips with this challenge.

The original version of this volume was transmitted in the fall of 1974 to the Finance Committee of the Board of Trustees of Princeton University. Through the support of the Ford Foundation, the paper is now being made public in the hope that other endowed institutions either will find it useful to examine some of the questions posed here or will derive comfort from the fact that their own inquiries and analyses have already covered the same, if not more, ground.

The Trustees' Finance Committee had begun a review of Princeton University's investment policies when the market was bouyant. Although Princeton had an outstanding investment record, the intensifying financial pressures on the University, coupled with the significant changes taking place in the world economy, were factors that were on the minds of the Committee members as they undertook their work. Regardless of how satisfying past performance had been, the future seemed less certain.

Our charge, on behalf of the Finance Committee, was to assist in identifying policy and strategic issues and the alternative systems of investment management open to Princeton. Our focus was on investment philosophy and management rather than on endowment spending policy. As part of the research persons in various parts of the investment business were interviewed and the practices of ten other universities, whose endowments, together with Princeton's, rank among the largest such funds in higher education, were surveyed.

Our work in the summer and fall of 1974 proceeded in the midst of a very troubled time. Colleges and universities, like most institutions, were subject to a set of severe financial pressures. The explosion of inflation in this country to double-digit levels in 1974, fueled in part by a sharp rise in imported crude oil prices, drove up the expenses of almost all universities to unsustainable levels, and a period of retrenchment in staffing and programs became mandatory for virtually all such institutions. At the same time, the capital markets suffered one of their worst declines in this century. Stock and bond portfolios shrank drastically in value. The real estate industry suffered perhaps most severely of all. No institution could expect to outmaneuver such sweeping market trends and university endowments, without any exception we are aware of, declined dramatically in value.* In the face of heavy losses in market values, institutions found they could not look to their endowments to tide them over a period of acute financial stress; indeed, many were forced to cut the rate at which they had been previously drawing on endowment earnings to meet current expenses in an effort to minimize the erosion in the real value of such funds that was taking place.

These conditions could not be ignored in writing a paper about endowment investment. The times are a painful reminder to everyone that investment policy needs to deal not only with how to maximize return but also how to control the degree of risk, or fluctuation, in the market value of endowment assets. In this volume we have tried, however, not to overreact to current conditions and to inform our analysis, as best we could, with a sense of the longer-range currents.

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* A study by the National Association of College and University Business officers of some eighty endowment funds shows that, for the five years ending 30 June 1974, every fund had a negative average total annual return when adjusted for increases in the consumer price index, and for the ten-year period ending on the same date only seven had positive real average annual returns, the highest of which was 2.7 percent. When the NACUBO study was broadened to take into account the performance of 157 mutual funds, the bleakness of the picture was essentially unchanged. It is possible that some institutions not covered by the NACUBO study could have switched from stocks and bonds to short-term investments just in time to avoid the steep market decline and then switched back out of short-term securities in time to catch the market rise. But for most institutions there are practical limits to the proportion of long-term invested assets that can be converted into liquid money market instruments, and, perhaps, there are even fewer institutions that would have the prescience to play such a timing game.

In particular, we sought to illuminate those continuing policy and strategic issues that are the critical components of portfolio decision making:

the relationship between the risk level set for the endowment fund and the attainment of return objectives;

the mix of investment media included in the portfolio in light of the possibilities for reducing risk through diversification;

the method by which investments are selected for inclusion in the portfolio and how portfolio turnover is controlled.

How well an endowment fares will, of course, be governed in large measure by broad economic trends. Allowing for this point, we see policy and strategic choices, rather than the selection of individual securities, as the major determinants of portfolio performance. To underscore further the importance of these general policy and strategic issues, included in this volume is a detailed investment policy questionnaire designed to focus discussions of investment philosophy on the most pressing questions.

Our work also examines the different systems by which an endowment can be managed and, in particular, what the role of trustees should be in superintending the endowment. Should trustees, for instance, concentrate their energies on resolving basic policy and strategic choices and delegate the task of selecting individual investments, within established guidelines, to professional managers? Or should trustees not only establish the overall investment philosophy for the endowment but also approve in advance all individual investment transactions? This volume delves into the pros and cons of these alternative approaches.

In addition, the different types of arrangements that trustees can make for obtaining professional advice in managing a portfolio have been examined. What are, for example, the comparative costs and other advantages and disadvantages of a university's retaining an established portfolio advisory firm versus organizing its own investment staff, either as direct employees or as part of a separate corporation controlled by the university? What are the benefits and risks of dividing the fund among several managers?

How do the trustees obtain advice on policy questions as well as on which particular investments to select?

How questions pertaining to the trustees' role and the type of organization to which they turn for advice are resolved can have an important bearing on the efficiency and cohesion with which a university portfolio is managed and thus, of course, on the degree to which performance achieves the goals set for the endowment.

In preparing this volume in the fall of 1975 for general publication, a few changes were made from our original report to the Princeton Finance Committee. Some of the information of parochial interest only to Princeton University as well as data obtained on a confidential basis from other universities have been deleted. In addition, the investment policy questionnaire that was developed in the course of discussions with Trustees after the report was delivered to the Finance Committee has been added. And, overall, observations are made that are applicable to endowed institutions in general rather than to Princeton in particular. (Indeed, it would be incorrect to infer that any of the comments in this version are intended to apply to Princeton in any special way.) Still this volume is essentially the same as the report we wrote a year ago without revision from the vantage of hindsight. It also remains designed primarily for endowed institutions. Nevertheless, it is hoped that the discussions of investment philosophy will prove to be of interest to other investors.

If, on occasion, we appear to speak in this volume with more conviction or certainty than seems warranted in these uncertain times, readers should attribute this to our style of expression. We recognize that we are dealing in this paper with subjects of considerable complexity for which there are few, if any, self-evident answers, except of course in retrospect.

We are indebted to the people we interviewed, all of whom were extremely generous with their time and counsel, and to the persons who were kind enough to work their way through the preliminary drafts of this paper and make helpful criticisms or suggestions. We also express our appreciation to Robert J. Wolfe for his valuable assistance in the research used in this volume and to Diana Parker for her perseverance in organizing and editing the manuscript.

The views expressed in this book are ours and should not be attributed to the trustees, officers, or other members of Princeton University.

Burton G. Malkiel
Paul B. Firstenberg
Washington, D.C. and Princeton, N.J.

Policy and Strategic Issues

Portfolio management may be thought of as consisting of three phases: *policy*, which has as its objective the establishment of a targeted return consonant with the degree of risk it is considered prudent to accept and the investor's needs; *strategy*, which centers on determining the composition of the different types of investment media to be included in the portfolio consistent with the overall policy stance and fixing the basic guidelines under which positions in the selected media will be established; and *selection*, which concerns the buying and selling of specific securities at specific times or the making of other individual investment decisions.

Trustees must, of course, exercise oversight over all phases of portfolio operations.[1] They can, however, choose to make all decisions concerning the portfolio themselves or to delegate some decision-making authority to professional advisors. In order to structure the management of the portfolio, trustees must therefore determine which decisions they will make themselves and which decisions, if any, they will delegate to others.

Trustee Role

Establishment of policy and strategy constitutes the core of trustees' fiduciary responsibility in superintending a university's endowment. Indeed, the constantly evolving nature of the modern economic situation makes it imperative for trustees to review, on a continuing basis, the policy and strategic options for the employment of endowment assets and to be prepared to consider new strategies in response to fundamental economic changes.

Princeton's own experience amply demonstrates the profound importance of the basic policy choices made by trustees. In the late 1940s and early 1950s, at a time when conventional wisdom indicated that an endowment fund should be invested largely in

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1 The terms 'portfolio' and 'endowment' as used in this paper refer to those portions of the overall assets of a university that are invested to generate income to support the university's educational programs. These are the assets that are essentially managed with long-range objectives in mind. Many universities also maintain a pool of funds to be expended within relatively short time spans (e.g., one to five years) to meet temporary cash flow requirements or to finance the construction of projects or other similar needs. The investment of such a pool is governed primarily by short-term cash management considerations rather than long-term investment strategy. In this discussion of investment strategy no distinction is made between funds given to a university under a stipulation that they will be used only for investments to produce income (technically speaking, 'endowment funds') and funds given to a university free of any such restriction but which the university determines to invest for income (in the jargon of the academy, 'funds functioning as endowment or quasi-endowment'). A university of course has more flexibility in the use of quasi-endowment funds and the differences in law between endowment and quasi-endowment may be relevant in determining a university's endowment

fixed-income securities, Princeton allocated the largest part of its endowment to equities, with a strong emphasis on growth-type stocks that have tended to produce higher total rates of return than so-called income stocks or bonds.[2] This strategic decision positioned the University to enjoy a higher long-run rate of return than other universities that remained more heavily invested in fixed-income securities.

Our survey of the experiences of other universities with major endowments indicates the institutions that did not achieve their investment goals were, in general, the ones where trustees failed to exercise adequate control over strategic decisions by giving too little direction with respect to the composition of the portfolio or to the risk levels they were willing to accept. It is important to note that disappointing performance has come about under a variety of management systems: delegation to a single manager, to multiple managers, or to a captive or semicaptive firm. Thus, in our view, the failure of a university to attain its investment objectives can generally be traced either to a policy or strategic decision by the trustees that proved to be incorrect (at least in hindsight) or, perhaps more commonly, to leaving such critical choices by default to the investment managers themselves.

Development of an investment philosophy goes far beyond simply specifying an eligible list of securities or the maximum proportion of the portfolio that can be invested in a single security or industry. There are at least three basic policy and strategic decisions trustees must make:

setting the risk level for the portfolio in light of the university's financial needs,

determining the composition of the portfolio, and

establishing the method by which securities are selected and controlling portfolio turnover.

The starting point is adjustment of an institution's return objectives to the level of risk it can accept.

The Importance of Setting the Risk Level for the Portfolio

One of the best-documented propositions in the field of investment is that, on the average, investors receive higher long-term rates of return for bearing greater risk. For years the idea of a tradeoff between risk and reward was a widely accepted intuitive principle believed to hold, at least to some extent, in virtually all investment fields. In recent years, with the availability of large-scale computers and information on prices and dividends available in machine-

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spending policy. See William L. Cary and Craig B. Bright, **The Developing Law of Endowment Funds: 'The Law and the Lore' Revisited** (New York: The Ford Foundation, 1974).

[2] As used throughout this paper, the term 'return' refers to total return, viz., the changes in the market value of the securities of the portfolio, whether realized or unrealized, plus dividends and interest received on the securities held. For a further explanation of total return see, 'The Definition of Endowment Income' (Report of a Special Faculty - Administration Committee, Princeton University, February 1970).

readable form, this principle has been documented in the case of the stock and bond markets. Although there is less formal evidence available, risk and reward also appear to come into play with regard to investments in real estate and other forms of investment. It follows that the 'risk level' set for the overall portfolio is of critical importance in determining the performance of the endowment.

What is meant when one speaks of a portfolio's 'risk level'? This takes a moment to explain.

Risk is a most slippery and elusive concept. It is hard for economists, let alone investors, to agree on a precise definition. Risk is usually associated with the possibility of suffering harm or loss. An investor who buys one-year treasury bills to yield 6 percent and holds them until they mature is virtually certain of earning a 6 percent return. The possibility of loss is so small as to be considered nonexistent. However, if the investor holds common stock for one year in a local power and light company on the basis of an anticipated 10 percent dividend return, the possibility of loss increases. The dividend of the company might be cut and, more important, the market price of the stock at the end of the year could be much lower resulting in serious net loss for the investor. Risk is the chance that expected returns from securities or other assets will not materialize and, in particular, that one's investments may fall in value.

If we accept that risk for investors is related to the chance of disappointment in achieving expected security returns, a natural measure of risk suggests itself: the probable variability or dispersion of future returns. A security or portfolio whose returns are not likely to depart much if at all from its average or expected return is said to carry little or no risk. A security or portfolio whose returns from year to year are likely to fluctuate widely (and for which sharp losses are typical in some years) is said to be risky. Thus, financial risk has generally been related to the variability of overall returns.

An investment portfolio promising a stable and dependable 9 percent each year is less risky than (and preferable to) another that [illegible] 9 percent but may return 36 percent in a year when the [illegible] and lose 18 percent in a year when the market [illegible] seems to be the view of the majority of investors. Return as used here and throughout this volume is composed of both dividends and any appreciation (or depreciation) in the market value of the shares held.[3]

Not all investors feel comfortable with this concept of risk. Some assert that riskiness cannot be related simply to the 'dispersion' of returns; if variance results from returns that prove to be better than expected, no one, they quickly point out, would call that 'risk.'

[3] See 'The Definition of Endowment Income.'

Concededly, only the possibility of downward disappointments constitutes risk. Nevertheless, as a practical matter, as long as the chances of extraordinary gains are roughly the same as the probabilities for disappointing returns and losses (that is, the distribution of returns tends to be symmetric), dispersion of returns serves as a satisfactory proxy measure of risk.

Currently, risk levels are most often expressed in relative terms. The term 'risk level' thus refers to a comparison of the 'riskiness' or variability in returns of one portfolio relative to another portfolio. It is simply a shorthand way of expressing the concept of relative variability of returns. Often the 'market' portfolio, as measured by one of the broad indexes such as the Standard and Poor's 500 stock average, serves as the standard of comparison.[4] Indeed, the responsiveness of a portfolio's rate of return to market swings is perhaps the most widely used measure of risk.[5]

Historically, there has been a close relationship between the risk level of a reasonably well diversified common stock portfolio and the rate of return the portfolio has produced. Diversified portfolios whose returns have been relatively more volatile than the market from year to year, i.e., riskier, have tended to produce over the long term a higher return than the market as a whole (as represented by a broad cross section of stocks). But such portfolios, while enjoying greater price appreciation during market upswings than funds of lower volatility, suffer more depreciation during market declines. On the other hand, portfolios made up of somewhat more stable stocks will, on the average, produce lower but less volatile returns than riskier funds.[6]

The comparative return of bonds versus stocks further illustrates the relevance of a portfolio's risk level. On the average, rates of return for corporate bonds have historically been lower than stocks but bond returns have also been somewhat less volatile than stock returns. Accordingly, portfolios made of stocks 'balanced' with bonds have tended to produce more stable but somewhat lower returns than those for the broad stock indices.

This relationship between the 'risk' as we have defined it, and 'return' is the reason it is so important to consider the risk level of the portfolio in formulating overall investment strategy. Decisions regarding the general categories of securities placed in the portfolio (e.g., stocks versus bonds) and the riskiness of the particular securities selected (e.g., aggressive, high-volatility, 'growth' stocks versus defensive low-volatility stocks) are likely to prove more important than decisions regarding which particular stocks in a given category are added to the portfolio.[7]

[4] See pages 22-3 and Appendix A for a further discussion of portfolio risk.

[5] See Appendix A.

[6] These relationships are described in greater detail in Appendix A. See also **Funds for the Future: Report of the Twentieth Century Fund Task Force on College and University Endowment Policy** (New York: McGraw-Hill Book Co., 1975), p. 89-104.

[7] Appendix A further amplifies the concepts advanced on these pages. Studies of the importance of 'risk' in determining portfolio return can also be found in **Funds for the Future;** Burton G. Malkiel, **A Random Walk Down Wall Street**, revised edition (New York: W.W. Norton and Co., Inc., 1975); James H. Lorie and Mary T. Hamilton, **The Stock Market: Theories and Evidence** (Homewood, Illinois: Richard D. Irwin, Inc., 1973); Charles D. Ellis, **Institutional Investing** (Homewood, Illinois: Dow Jones-Irwin, Inc., 1971); J. Peter Williamson, **Performance Measurement and Investment Objectives for Educational Endowment Funds** (New York: The Common Fund, 1972).

The higher return one can expect to receive for accepting high risk should not, however, lead a university or any other investor to strive to maximize return and ignore risk or volatility. Even for a university that spends currently only the dividends and interest earned on its endowment, excessive variance (fluctuations) in the value of the portfolio can create difficulties in budgeting the amount of spendable funds available to the university, particularly if the portfolio does not generate a sufficient amount of dividend and interest payments during down markets. If such receipts decline too far below the level of the university's needs for current funds, its trustees may be forced to decide whether to cut the amount of spendable income, to sell securities in a declining market, or to switch from stocks to bonds to increase legally spendable income, even if such a step is unsound from the point of view of maximizing long-term endowment growth.

The dilemma especially exists for universities that have adopted a total-return concept of spendable income. The operation of any such plan implies dipping into capital (endowment) during low points in the market and adding to capital during good times. Thus, volatility per se can damage the long-run growth of the endowment. If the portion of the total return earned annually by the endowment and expended currently by a university remains constant while the market value of the endowment is declining, the result is that the value of the endowment fund is being reduced when stock prices are falling. Conversely, if spending remains stable when the market value of the endowment is rising, this means adding to the value of the endowment when stock prices are rising. By a kind of reverse dollar-cost averaging, it follows arithmetically that the more volatile a portfolio is, the more permanent damage there will be to the long-term growth in value of the endowment fund.

A reasonable degree of predictability in the amount of funds annually available from the endowment is also important from the point of view of university financial planning. Academic programs and activities cannot be turned off and on according to the vicissitudes of the market. Indeed predictability may be sufficiently important in stabilizing a university's financial planning to warrant adopting a policy that provides a more consistent but lower total return than one which provides a greater return over the long term but is vulnerable to sharp fluctuations. Trustees may well wish to adopt an investment strategy that attempts, insofar as possible, to insulate a university from extreme volatility. Of course, a risk position that is too conservative and a resulting expected return that is too low could force a university to make painful budget cuts. Trustees must select the appropriate return objective for the portfolio in light of both the level of risk considered acceptable and the university's needs.

Determining Portfolio Composition

Once a targeted return objective and risk level are set for the portfolio as a whole, the trustees must determine the mix of investment assets that is most likely to achieve the overall performance goals established for the endowment. Deployment of portfolio assets among different types of investments may be the best means of achieving the optimum risk-return tradeoff.

Capital Market Theory

Diversification of investments will serve to reduce the risk level of the portfolio as long as the fortunes of the various securities in the portfolio are not all dependent, to the same degree, on the same economic variables. If the price movements of the various investments selected for the portfolio do not move in completely parallel directions (e.g., when one goes up, the others always go up), there will be some reduction in the overall risk level of the portfolio.[8]

For example, suppose U.S. stock prices tumble in response to a Vietnam-like associated inflation while stock prices in West Germany rise as that country keeps inflation under tighter rein, and then the situation is reversed as the German economy has more difficulty absorbing a rise in imported raw material prices than the U.S. If a portfolio were divided equally between investment in U.S. and German equities, the gains in German securities might offset the declines in U.S. securities and vice versa (assuming the differential performance is not offset by exchange rate changes). As a consequence, the volatility of the endowment would be less than if the assets were wholly committed either to U.S. or to German securities.

In the hypothetical case cited, the U.S. and German stocks can be said to have a negative (or inverse) correlation as their prices tend to move in predominantly opposite directions. In an interdependent world, finding investments which have a *perfect* negative correlation (i.e., one *always* does well when the other does poorly and vice versa) is an unlikely, if not impossible, feat. When the economy goes through the wringer, most investments will suffer, particularly under the stress of a worldwide phenomenon (such as quintupling of oil prices in a relatively short

[8] The term 'covariance' is the technical term used to measure the degree of parallelism between the returns of different securities. Whenever the returns from two securities tend to move in tandem (i.e., when one goes up the other tends to go up as well) their covariance is described as positive. If returns tend to be out of phase, the two returns are said to have a negative covariance.

time span). However as long as there is some lack of parallelism in the way the securities in a portfolio respond to developments, diversification will reduce risk. Reducing the risk level of a fund through diversification thus depends not on the number of companies or industries in the portfolio, but in having securities in the portfolio that are not all similarly affected by the same developments.

The reason diversification cannot reduce all risk, as it did in our hypothetical example, is that stocks usually tend to move up and down together. Still diversification is useful because it can eliminate some risks. Modern capital market theory tries to focus directly on just what part of any security's risk can be eliminated by diversification and what part cannot. The theory decomposes the risk in any security (or portfolio) into two parts. The first is called *systematic risk* and this arises from the basic variability of stock prices (and economic activity) and the general tendency for all stocks to go along with the general market at least to some extent. The remaining variability in a stock's price (and therefore in its returns) is called *unsystematic risk* and results from factors peculiar to that particular company (e.g., a sudden strike or a major oil find).

Systematic risk, also called market risk, captures the response of individual stocks (or portfolios) to general market swings. Some stocks such as those of capital goods producers tend to be more seriously affected by economic fluctuations and their stocks will characteristically vary more than proportionately with market movements. Other securities, such as those of electric utilities, tend to be less sensitive to economic activity and to stock-price fluctuations. This relative volatility or sensitivity of stocks or portfolios to market moves can be estimated on the basis of the past record and is popularly known by the Greek letter beta. The standard of comparison for this relative volatility index is some broad market index, such as the Standard and Poor's 500 stock index, which gets a beta measure of 1.0. Stocks that are more sensitive to market movements get beta indices higher than 1.0 while more stable stocks receive a lower index. (See Appendix A for a further explanation of beta indices.) The important point to realize is that systematic risk cannot be eliminated by diversification. It is precisely because all stocks move more or less in tandem that even diversified stock portfolios are risky.

Unsystematic or specific risk is the variability in stock prices that results from factors specific to individual companies. The discovery of an important new product could be expected to propel a stock's price upward while a government finding questioning the safety of a key product would probably cause a sharp price decline in the company's stock. But this is precisely the kind of risk that diversification can reduce. The whole point of portfolio theory is that to the extent stocks do not always move in tandem, variations in the returns from any one security will tend to be washed away or smoothed out by compensating variation in the returns from other securities. Indeed, once a portfolio of thirty or more well-diversified stocks is selected practically all of the unsystematic risk will be eliminated and the portfolio will move up and down with the market in accordance with its systematic risk; that is in accordance with the average beta value of the securities in the portfolio.

Appendix A explains some of the intricacies of the beta calculation and also presents some empirical evidence showing that over the long run portfolio returns tend to increase with the (systematic) risk level of the portfolio. Managers should be clearly aware of the beta level of their portfolios since risk is probably the most important determinant of long-run returns. It was the high beta portfolios that well outdistanced the others in the long bull market from 1960 to 1968. And, as would be expected, the high beta portfolios suffered the most in the vicious bear market in 1973-74. Beta is not perfect and is certainly not a substitute for brains, but it is an important accessory in the portfolio manager's toolbox.[9]

Stocks as the Core of the Portfolio

Historically, investors have been compensated in the form of superior returns for the added risks of owning common stocks in comparison to fixed-income securities. This is actually a logical extension of the capital market theory alluded to above. A series of studies have shown this to be the case both over very long time spans and for most shorter time periods.[10] Past experience thus argues for building the core of an endowment fund around a diversified pool of common stocks.

But stunned by two steep bear markets within a four-year period, some professionals now have doubts as to the continued wisdom of maintaining a largely equity-oriented portfolio, questioning whether stocks in the future will provide the same returns as they have in the past.

Those concerned about the stock market have had no trouble finding reasons for their anxiety. For one thing, the structure of the market has changed. While twenty-five years ago the bulk of the trading was done by individual investors, approximately 70 percent of stock exchange activity now is carried out by institutions. It is widely asserted by professionals that this changing pattern of stock trading has made the market less stable and more volatile by reducing the market's liquidity. The changing institutional participation in the market may also affect the level of stock prices. In the late 1940s, few institutions had discovered equities and the progressive enchantment of institutional investors helped fuel the new bull markets of the 1950s and 1960s. In the early 1970s, many institutions became disenchanted, which has undoubtedly been responsible for some of the sharp decline during 1973 and 1974. To some extent the optimism or pessimism of institutional investors can be a self-fulfilling prophecy.

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[9] See Appendix A and Malkiel, **A Random Walk Down Wall Street**, pp. 187-94; **Funds for the Future**, pp. 84-7; Lorie and Hamilton, **The Stock Market**, pp. 198-210.

[10] One exception to the general superior returns earned by stocks versus bonds may be certain spans during 1969-74 depending on how the period is measured. The basic studies of stock versus bond returns are reported in Lorie and Hamilton, **The Stock Market**, p. 21, and Roger G. Ibbotson and Rex A. Sinquefield, 'Stocks, Bonds, Bills, and Inflation: Year-by-Year Historical Returns (1926-1974),' **The Journal of Business of the University of Chicago**, vol. 49, no. 1, January 1976, pp. 11-47. See Appendix B, pp. 62, 65 for tables showing stock and fixed-income security returns over time.

Apart from such possible changes in the structure of the market, one can point to the more fundamental fact that corporate returns (adjusted for inventory revaluations and for replacement cost depreciation) as a share of U.S. national income fell considerably during the 1950s and 1960s, as have rates of return on corporate investment.[11] Of course, it is possible that a less inflationary economic recovery may well reverse these trends. However, many investors feel they can look forward to nothing but more serious trouble, especially since it is very easy for the public to see 'high corporate profits' as the clear villain in the inflation drama. 'Who can doubt,' such investors maintain, 'that the corporation will come under increasingly severe political attack and with it the profits and dividends that undergird stock prices?'

Certainly, there is ample recent evidence that, contrary to popular belief in earlier times, common stocks are not a good inflation hedge. One can obtain some idea about the impact of inflation by comparing the results from investing in a pool of stocks equivalent to the Standard and Poor 500 Common Stock Index during the years when inflation was nominal and when it soared. In the so-called 'golden era' of the thirteen years from January 1953 through February 1966, with inflation being contained at an average annual rate of 1.4 percent, an S & P equivalent stock portfolio produced a real annual compound rate of return of 12.6 percent. During the more recent shorter spans of four years (from February 1966 ending in May 1970) and eight years (from February 1966 through October 1974) when inflation averaged 4.4 percent and 5.4 percent respectively, a substantial erosion of values occurred in the stock market and, in fact, an S & P equivalent portfolio would have resulted in a negative rate of nominal return. Econometric analyses confirm the deleterious effect of inflation on stock returns.[12] Parenthetically, it should be noted that a portfolio of high-

[11] See for example William D. Nordhaus, 'The Falling Share of Profits,' **Brookings Papers on Economic Activity 1: 1974**, pp. 169-208. Nordhaus's analysis reveals that rates of return in 1973 were relatively low compared with historical precedent. The decline is particularly striking when the calculation is based on true economic income. Of course, such data must be interpreted with some care. It measures average rates of return on past investments and not the anticipated rates of return on future investments. It is quite possible that returns on new investments have risen even while average past returns have fallen. Indeed, past returns may have fallen in part because relative price changes made obsolete many facilities that were constructed on the basis of a different price structure. According to this view, it is the obsolescence of parts of our industrial plant that at once lowers average rates of return on past investments and raises anticipated rates of return of future investments.

[12] See John Lintner, 'Inflation and Security Returns,' **The Journal of Finance**, vol. 30, no. 2, May 1975, p. 259. See also Burton G. Malkiel and Richard E. Quandt, 'The Supply of Money and Common Stock Prices: Comment,' **The Journal of Finance**, vol. 27, no. 4, September 1972, pp. 921-6.

grade long-term bonds fared just about as badly, if not somewhat worse, during these two market cycles. Only the short-term money market appears to have provided the investor in this period with a return equivalent to the rate of inflation.[13]

Of course, the two recent market cycles are heavily weighted by the collapse of equity prices in 1973 and the first three quarters of 1974, the worst decline since prior to World War II, and are not representative of returns over long-term market cycles. Nevertheless they do reflect what happened on average during a period of sharply escalating inflation. Unfortunately, many investors who invested in higher-risk portfolios did worse than the average. The fact is that high and variable rates of inflation lead to the kind of uncertainty that adversely affects equity prices. Moreover, even if the level of inflation remains constant but high, the impact on equity returns may be negative for several reasons. High inflation rates have tended to increase effective real corporate tax rates,[14] to engender incomes policies that squeeze corporate profit margins, and to create severe balance sheet strains.

In addition, ever since the OPEC countries imposed an oil embargo and sharply increased crude prices two years ago, uncertainty about future energy costs has also made investors wary about how well our economy will fare in the years ahead. The durability of inflation in the face of a deep recession is another understandable source of investor anxiety.

For all these reasons, the skeptical investors certainly could be right about the gloomier prospects for corporate earnings, but the stock market is efficient in digesting information. Although no one can say for certain what kinds of returns investors will earn from common stocks in the future, two points are clear: pessimistic forecasts of corporate earnings and the competition from higher yields on fixed-income securities have both affected stock prices. For instance, price-earnings multiples and ratios of the market value of common equities to the replacement cost of the underlying assets in the fall of 1974 were at levels similar to those existing in the late 1940s when the market was (incorrectly) anticipating a severe depression. Although stock prices have recovered substantially since 1974, these ratios are still not far from the lowest levels in several decades.[15]

In the fall of 1974, we wrote in the original version of this paper:

'It may take more time for investors to agree that the market has discounted conditions sufficiently and to regain confidence in equities. It is also possible that more bad news may come out that is not already discounted in equity prices and the market could fall further. But there is a price level at which the market will have fallen sufficiently to provide once more the returns necessary to make equities compare favorably with alternative investments. This at least is the pattern that has developed in the case of earlier bear markets. Indeed, it is possible that investors are far more pessimistic than is warranted by the economic situation, and that the risk in equities has been excessively discounted by overly anxious institutional investors. As one professional remarked, "Stock prices may represent the best values today, almost uniquely cheap in a period when everything else is overpriced."'

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[13] Source of data on stock and bond performance is George M. Lingua, Senior Vice President, First National City Bank, 'Real Investment Returns and High Secular Inflation: Is Coexistence Possible?' (Delivered to the Fourteenth Annual First National City Bank Insurance Forum, 29 October 1974). The above figures measure from a market high point to a market low point. But a low-to-low point (October 1966 to May 1970 or October 1974) would also fail to produce a positive real rate of return. Even a high-to-high analysis over approximately the same set of years (February 1966 to January 1973) shows a positive real return of only 2.7 percent. Tables comparing returns and inflation rates are set forth on pages 62 and 65. Appendix B.

[14] Inflation in the 1970s, produced an increase in real corporate taxes as income was overstated because of the inclusion of inflation-related inventory profits and because of the understatement of depreciation charges resulting from the calculation of depreciation on the basis of original rather than replacement costs.

[15] There is some difficulty in comparing price-earnings multiples today with the past because of the overstatement of current earnings due to inventory profits and inadequate depreciation allowances. Moreover, bond interest rates are now considerably higher than in the past, implying that stocks should sell at lower multiples of earnings in order to be priced competitively with bonds.

The market has had a strong upward surge since we wrote the above paragraph. No one can say with certainty how the market will now react to the economic developments that lie ahead and it may take a considerable period of time to rebuild confidence in equities after the experience investors have suffered in recent years. But trustees need to look beyond immediate conditions and current cycles to the longer-term trend of the economy. For instance, a number of corrective forces that will improve corporate profits in the period ahead may well now be at work. Since price controls have been phased out, prices have tended to rise faster than wages; industrial prices have been quite firm during the 1974-75 recession (perhaps reflecting, in part, the necessity to improve profit margins in order to raise the capital to finance future corporate expansion) and some dampening of inflation has reduced the fictitious components of corporate income and lessened the real tax burden on business. All of these factors could lead to a marked improvement in the state of the equity market, particularly if inflation subsides.

Thus, we would see the core of an endowment being committed to common stock investment and to a low turnover in stock holdings.[16] At the same time, trustees should consider the extent to which the inclusion of other types of investments in the portfolio may be advantageous. We urge a conscious policy of some diversification for several basic reasons:

1 The political and economic risks mentioned above, particularly a resurgence of inflation, could circumscribe the growth in the U.S. corporate earning power. At a minimum, uncertainty about the future may continue to undermine the wide acceptance of publicly traded corporate equities that developed during the 1950s and 1960s.

2 There may be some opportunities in other areas of investment offering both attractive returns and the opportunity for risk reduction through diversifying sources of endowment income. For example, bonds, or other forms of fixed-income securities, may now better compensate investors for expected inflation than at any time since

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[16] See pages 25-6 for a discussion of turnover costs.

World War II, and they are less volatile than most common stocks. Fixed-income investments may thus offer the possibility to lower the overall risk level of a portfolio without sacrificing the ability to earn an adequate real rate of return. Other investment media, such as equity investment in real estate, may also warrant consideration, especially when available at distress prices from owners who are badly hurt by economic conditions. The range of future investment options open to the portfolio is discussed in more detail in Appendix B, 'Positioning the Portfolio: Future Investment Options.'

3 A strategy of diversification among different types of investments would enable one to hedge one's bets and reduce the chance of serious error regarding the composition of the portfolio, provided that the varied forms of investments are not affected in the same way by economic events. No one is omniscient enough to forecast the future. Thus, it may be prudent at least to position an institution's portfolio so that it may react to, or take advantage of, possible future changes in the capital markets by developing some experience with investments other than common stock. Then if a major change in investment mix is deemed warranted, the investment manager will be able to undertake it.

Switching between Markets

The suggestion that the portfolio mix be reviewed to take into account basic changes in the capital markets does not mean that trustees should constantly try to call turns in the market and switch investments from market to market (as, for example, between stocks and fixed-income securities) on the basis of their views concerning future market trends. Obviously, in hindsight one would have been better off in the winter of 1972-73 to have liquidated common stock holdings in favor of short-term money market investments and then to have reinvested in stocks at the end of 1974. However, there is no evidence that anyone can consistently call turns in the market with any degree of reliability. The success of such a switching policy requires two correct decisions: one has to be right getting out of stocks and correct again about the proper time to get in. Moreover, the transaction costs of switching blocks of securities are likely to be on the order of 5 to 10 percent, considering brokerage costs, market spreads, and the adverse price movements often induced by the purchases and sales.

The risk of suffering large losses in switching from one market to another is illustrated by one university's ill-fated plan in the late 1940s involving elaborate decision rules that were expected to swing its endowment funds back and forth between bonds and stocks at just the right times. The result was wholesale selling of stocks in the late 1940s just as the biggest bull stock market in history was gaining momentum, and the proceeds were put into bonds just before a major bear market in bonds.

A number of theoretical models have been developed to help investors who engage in the timing game, but none seem without significant risk. Therefore we are particularly averse to the suggestions that a university try to move in and out of the stock market according to its capacity to forecast market trends. Investors who wish to play this timing game must possess an unusual degree of prescience about the course of the general economy, corporate profits, interest rates, and indeed the entire set of international economic, political, and social developments that affect the securities market. The existence of such omniscience, to say the least, is hard to document.

As Professors Lorie and Hamilton conclude in their book, **The Stock Market: Theories and Evidence**, 'The visible record of professionally managed portfolios indicates that many play the timing game and that few, if any, win it.'[17] Accordingly, decisions made by trustees concerning the risk-return tradeoff, the university's needs, and the composition of the portfolio should tend to be long-run decisions, not immutable, but unlikely to change rapidly and frequently in response to short-run market conditions.

Method of Selecting Securities for the Portfolio

In the case of both stocks and fixed-income securities, trustees need to address the basis on which such securities are to be selected for inclusion in a university's portfolio. This is a question of strategy on which trustees and those who actually make the purchases and sales must be in full accord.

Common Stocks

Over the last twenty years the performance of common stocks has been subjected to rigorous academic research and analysis and a new set of theoretical propositions about the behavior of the stock markets has been developed (although to date academicians have had only limited success in persuading practitioners to adopt these concepts). The tenets of modern capital market theory are discussed in more detail in Appendix A. In brief, the main thrust of the modern theory is that consistently superior skill in selecting stocks that have been under- or overvalued in the market is likely to be quite a rare art.

[17] p. 24.

Studies indicate there is no evidence that professional firms can produce, on a sustained basis, above-average returns from managing stock portfolios of equivalent risk, primarily because in an organized central market place, such as the stock market, prices at any point in time usually will reflect both the problems and opportunities inherent in any given stock. With hundreds of security analysts thoroughly studying most, if not all, stocks, the publicly available information that affects security prices is digested quickly and reflected in the prices at which securities are traded. This assumes, of course, that in fact a large number of investors understand the information that is available and make rational decisions.

A market where all developments are reflected quickly in security prices is characterized as an 'efficient market' and one conclusion is that, in such an environment, few professional money managers can hope to be consistently wiser in analyzing stock values than their competitors, at least without the benefit of inside information. Even investment professionals who insist that it is feasible to organize the analytical capability to make a superior selection of individual securities do not deny that it is exceedingly difficult to identify overvalued and undervalued stocks. Accordingly, one can conclude that the primary reward to be expected in making stock investments is compensation for assuming a higher level of *risk* than other investors are willing to accept.[18]

The efficient market hypothesis has important potential implications for the manner in which a stock portfolio is constructed. If one accepts the idea of an efficient market for stocks, instead of seeking to pick individual securities that will outperform the market, one would seek to own a widely diversified group of stocks whose overall market value moves in very close parallel with the market in general (measured by some proxy such as Standard and Poor's 500 Common Stock Index), adjusting the risk level of the overall portfolio according to one's goals and objectives. Such a strategy would directly contradict the perceived experience of most professional money managers and is contrary to the method by which institutional investors have selected stocks over the years.

At present, when most institutional investors buy or sell an individual security, they make a judgment whether the potential return that the security might earn is sufficient to justify the risk or uncertainty that in fact such a return will be realized. This judgment is made in large part on the basis of information available about the financial condition of the company, the strength of the demand for its goods or services, the quality of its management, how well its main lines of business are likely to fare in the

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18 It would appear, too, that the idea of an 'efficient market' is not limited to stocks. Although it may at one time have provided more opportunity for identifying under- or overvalued securities, the bond market appears to be becoming increasingly like the stock market in this respect. See page 25.

future, and the extent to which its stock price reflects all these various factors. However, if one accepts the concepts of an efficient market and modern portfolio theory, then the critical factor to examine in making assessments of risk would be the sensitivity of securities included in the overall portfolio to general market fluctuations. This means analyzing the degree of the volatility of stock returns relative to the market in general (i.e., their 'beta' coefficient) and the degree to which the portfolio is diversified to insure that all 'unsystematic risk' is effectively eliminated.[19]

In determining the kind of process to be employed in selecting individual stocks for the university's portfolio, trustees should weigh the merits of conflicting views about the efficiency of the market. However, in establishing overall policy for the portfolio the importance of calculating the tradeoff between risk and return is not dependent on acceptance of the efficient market theory as opposed to analysis of underlying stock values. Even those professionals who believe that skilled selection of individual securities can affect return agree that there is a tradeoff between the degree of risk and the rate of return enjoyed over the long term. Moreover, many professional portfolio managers, even as they assert they can outperform the market through superior selection, now employ risk measurement techniques as tools to evaluate the extent to which market factors or selection skill contribute to portfolio returns.

Such measurement techniques, although not without flaws,[20] make it possible to analyze with reasonable approximation whether a portfolio's differential returns compared with other institutions reflect simply a difference in the degree of risk taking or superior selection of securities of equivalent risk. The employment of such measurement techniques can also assist trustees in controlling the overall volatility and diversification of the portfolio. If the evidence shows that a manager cannot consistently discriminate between overvalued and undervalued securities, then the portfolio can be diversified to make it correlate more closely with the general market, thereby eliminating the specific risk of trying to pick the 'right' companies. If the evidence indicates that a manager is demonstrably good at picking the 'right' stocks, then trustees may want to encourage the manager to try to outperform the market. Thus, without accepting all of the implications of the efficient market thesis, the employment of risk measurement techniques can assist the trustees in evaluating investment performance.

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[19] For a further definition of the term 'beta' and its use in investment analysis see Appendix A. See also Malkiel, **A Random Walk Down Wall Street**, pp. 178-82; **Funds for the Future**, pp. 80-7; William F. Sharpe, 'Adjusting for Risk in Performance Measurement,' **The Journal of Portfolio Management**, vol. 1, no. 2, Winter 1975, p. 32.

[20] See Appendix A for a discussion of risk measurement techniques. See also Malkiel, **A Random Walk Down Wall Street**, pp. 178-86; **Funds for the Future**, pp. 80-7; Sharpe, 'Adjusting for Risk in Performance Measurement'; Lorie and Hamilton, **The Stock Market**, pp. 178-247, 265-6; Williamson, **Performance Measurement and Investment Objectives for Educational Endowment Funds**.

Bonds

In recent years, the practice of buying bonds and holding them until maturity has been discredited in some circles, and the idea of active or intensive bond portfolio management has come of age.

The active bond portfolio managers use several approaches. They may attempt to anticipate broad moves in interest rates by changing the portfolio's average maturity, going short when rates are expected to rise and long when rates are expected to fall. Other techniques include anticipating moves between major market sectors, for example, shifting between utility and industrial bonds or between government and government-agency securities, based on anticipations of differential rates of return. They also try to take advantage of other fluctuations in the demand and supply for particular securities. Bonds also may be sold to sinking funds at prices above current market quotations. In addition, many bond managers do so-called 'arbitrage' trading operations, or swaps, between identical securities. Finally, some bond managers try to anticipate changes in the credit or liquidity rating of individual issues. For example, today some managers look for values overlooked by the market in A-rated utility bonds or try to take advantage of temporary supply imbalances that create opportunities for extra rewards on particular issues.

Professionals engaged in actively managing bonds believe that through a combination of these techniques, although primarily by discerning interest rate trends and anticipating supply-demand pressures between market sectors, they can outperform a portfolio of fixed-income securities which are passively held (i.e., until maturity) or a bond market index by 1 to 3 percent annually in added return. It is readily conceded that the number of activist-minded bond managers is growing and that the opportunities to exploit passive holders of bonds is diminishing. But practitioners of this school will assert, as one leading professional bond manager has put it:

> *Many . . . believed for a long time that fixed-income portfolios did not need management so they paid little attention to this area of potential return or loss. Instead, they concentrated on switching funds into stocks. Unfortunately, even those . . . trustees who moved away from no management at all of bonds did so in the belief that the desirable alternative was the opposite end of the spectrum, hour-to-hour switching and incredible levels of portfolio turnover. This proved to be a mistaken belief, and the past year has shown that 'go-go' tactics in bond management can be a disappointment too. It needs to*

be added, however, that even inadequately managed bond accounts have performed better than most stock accounts in the past several years or so, and well-managed bond accounts have done far better.[21]

It has been very difficult in our investigation to collect hard and firm figures about the success of active bond portfolio management. The following, however, are our impressions based on a number of interviews and an examination of whatever evidence we were able to find. It appears that various types of arbitrage and swapping operations can no longer produce large excess returns, even assuming it was once possible to obtain them. Too many people are now watching for undervalued situations and, therefore, overvalued and undervalued bonds are likely to be few and far between. In this sense, the bond market may be approaching the kind of 'efficiency' that has been found in the equity market.

It also appears from our investigation that, to the extent some investors may have made excess returns from active bond portfolio management, they have done so primarily because they correctly anticipated the long bear market in bonds. One wonders, however, about the wisdom of relying on a strategy of consistently predicting turns in interest rates. We conjecture that predicting interest rate movements might prove as illusive as predicting turns in the stock market. We should also point out that if the manager misses, the bond portfolio will be penalized with the very heavy transaction costs associated with high turnover rates. This does not mean, however, that an investor should not seek to identify bonds whose yields may temporarily be out of line with their risk levels as long as such opportunities exist in the market.

In sum, although there may be opportunities for skillful managers to obtain a small improvement in returns from bonds at the margin through exploitation of imperfections in this market and supply imbalances, it appears that such opportunities are likely to diminish as the bond market becomes more efficient. For the long run, doubt exists whether consistent, above-average performance in the bond market will be any easier to come by than it has proved to be in the stock market.

Controlling Turnover

Minimizing transaction costs through controlling portfolio turnover can be important in improving the return of the portfolio at the margin. Portfolio managers who have high rates of turnover are penalized by very high transaction costs. The brokerage costs for a turnaround considerably understate the true cost of trading. Investors must take into account that purchases are typically made at a dealer's asked price and sales at the bid price, in addition to the problem that buying and selling activity per se tends to make the market move away from the transactor. Some professionals have estimated that true costs of turnover amount to as much as 7 or 8 percent for each in and out trade, especially in today's 'thin' markets. The amount of turnover in the portfolio should thus continue to be an important focus of concern on the part of trustees.[22]

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[21] Daniel S. Ahearn, Senior Vice President, Wellington Management Company. See also Ahearn, 'The Strategic Role of Fixed Income Securities,' **The Journal of Portfolio Management**, vol. 1, no. 3, Spring 1975, pp. 12-6.

[22] Turnover rates on large professionally managed portfolios vary widely. During the 1960s, rates for mutual funds ranged from 17.3 percent per year to 55.6 percent per year. Rates for private non-insured pension funds and life insurance companies have ranged from 7.7 percent to 23.1 percent and from 9.8 percent to 28.1 percent, respectively. Irwin Friend, Marshall Blume, Jean Crockett, **Mutual Funds and Other Institutional Investors** (New York: McGraw-Hill Book Co., 1970), p. 118. Lorie and Hamilton concluded that, on the average, institutional investors had turnover ratios of approximately 35 percent. **The Stock Market**, p. 256.

Investment Policy Questionnaire

The response trustees develop to the fundamental policy level issues we have enumerated will provide the essential framework of an investment policy. Once developed the framework provides a context within which the whole series of more particular questions of policy strategy can be addressed. We offer here an illustrative set of the more specific questions in the format of an investment policy questionnaire.

What risk-return performance objectives should be established for the endowment?

What average annual total rate of return should be established as an investment goal? If such return objective is achieved, will the growth in funds available from the endowment for the operating budget keep pace with the expected rate of growth in the institution's expenses?

What is the likelihood of achieving such a goal over a reasonable period of time? For instance, how does the future return objective compare with the past returns of various yardsticks, such as the different securities markets on average (e.g., the stock market, the long-term high-grade bond market, and short-term treasury notes), and the portfolios of other institutions and funds over different past time periods?

What kind of variability in returns can be anticipated if the proposed return objective is adopted? For instance, how does the return objective compare with the historical variability of returns of the various securities markets on average and of the portfolios of other institutions over different past time periods?

Assuming the institution could achieve the targeted return objective, what would be the likely gain in terms of the long-term growth of the endowment compared to a lower but less variable return over various future time periods? Is the anticipated gain from a high-return strategy likely to compensate the institution adequately for assuming a higher level of risk? In short, based on past experience, how much extra rate of return, above what might be earned on a risk-free investment, can be obtained for the level of risk assumed?[23]

What spending policy should be adopted for the institution's endowment in light of established performance objectives?

Which part of the projected total rate of return should be considered available to be spent annually for current operating needs and which part reinvested for the future, taking into account both the institution's budget requirements and the amount of funds needed to be reinvested to sustain a desirable rate of endowment growth in light of anticipated inflation? What would be the effect of different spending levels both on funds available for the budget and on the long-term growth of the endowment? Does the plan adopted contemplate the preservation of the purchasing power of the endowment over time?[24]

Should a university adopt a spending policy which permits some portion of capital appreciation as well as interest and dividends to be expended for current needs? Will this spending rule provide more freedom in investment management? Or should investment objectives include a minimum earned income requirement sufficient to cover planned spending as a means of stabilizing the flow of funds available for current operations? While stability in the flow of resources available from the endowment is important in university financial planning, is the imposition of a minimum yield requirement on the investment of the endowment an effective means of limiting risk?

What overall mix of investment assets in the portfolio is most likely to achieve performance objectives?

Common Stocks (U.S. and Foreign)
What percentage of the portfolio should be committed to U.S. common stocks? This may be the most central policy issue that needs to be addressed.

What is a reasonable expectation about the prospects for corporate profits for the next several years? Can we continue to expect common stocks to provide clearly superior returns to alternate forms of investment?

[23] This last paragraph, in effect, entails a projection of what the academic community labels the 'reward to variability ratio' where reward is defined as the difference between the rate of return from a security or portfolio and the return from a riskless security such as a treasury bill. See Sharpe, 'Adjusting for Risk in Performance Measurement'; Williamson, **Performance Measurement and Investment Objectives for Educational Endowment Funds**, pp. 37-42; **Funds for the Future**, pp. 82-4, 87. For a further discussion of setting performance objectives, see **Funds for the Future**, pp. 77-96; Lorie and Hamilton, **The Stock Market**, pp. 211-66; Williamson, **Performance Measurement and Investment Objectives for Educational Endowment Funds**, pp. 35-64; Malkiel, **A Random Walk Down Wall Street**, pp. 182-203.

[24] The total return a university earns from invested funds consists of income (dividends and interest) and any net increase in the market value of its securities. At one time all universities spent only income earned in the form of dividends and interest and no part of capital appreciation was treated as available for current operating expenses. The total return concept recognizes that all forms of return contribute to the resources of a university. Under a total return approach an appropriate allocation is made of the flow of these resources, in whatever legal form earned (be it interest, dividends, or capital gains), between present and future needs. Determining the funds available for current spending in this manner facilitates investment management by eliminating the necessity to design the investment

Should there be serious reservations about common stocks as a reliable long-run inflation hedge? How persuasive, in fact, is the evidence that not only escalation in inflation rates, but high levels of inflation themselves may have a negative impact on common stock returns, and that stocks may thus be a fairly ineffective inflation hedge or have markets already discounted such dangers so that equities will continue to provide the higher returns necessary to justify their greater risk?

Whatever overall percentage of the portfolio is committed to stocks, what should be the mix of businesses in which one holds stock? How many of the stocks in the portfolio are likely to be similarly affected by the same developments? What portion of the stock portfolio should be committed to low-yielding stocks with the potential for substantial appreciation and what portion to stocks which offer higher yields but less prospect for capital gains?

Can the volatility of the common stock portfolio be reduced, without sacrificing return, by purchasing equities in foreign countries? There is some evidence that in the past the prices of stocks in various countries have not moved in parallel directions, but will this continue to be true in the future or will capital markets in different countries become more synchronized? What special risks may be associated with off-shore investment?

Option Writing

Should one engage in a strategy of writing options against the existing portfolio, being willing to 'sell' the uncertain possibilities of appreciation for the guaranteed return provided by option premiums and for some protection against losses? Will such an option-writing strategy serve to dampen the volatility of the overall return from the portfolio without reducing return (taking into account the transaction costs involved in option writing and potential tax liability)?

Alternatively, should one be willing to write options in an effort to obtain a better rate of return than is available through alternative investments? Are call options priced sufficiently high because of risk-seeking behavior on the part of option buyers to make option writing against long positions a more profitable strategy than buying stocks? Over the long term, will the availability of more option writers cause premium levels to decline?

How dependable are the current exchange and secondary market facilities? How should an option-writing program be managed so that it does not interfere with, or distract from, the basic equity management of the portfolio?

mix of the endowment to produce some current return in the form of interest and dividends. In considering any total return formula it has to be recognized explicitly that the ability of a university to maintain the purchasing power of the endowment into the future depends on reinvesting enough of the total return to enable the value of the endowment—and the return generated by the endowment—to grow at roughly the same rate as its expenses increase. See 'The Definition of Endowment Income'; **Funds for the Future**, pp. 16-8, 111-29.

Stock Lending

Should the portfolio engage in a program of lending its stock and bond certificates to brokers in return for cash collateral that can be invested during the period the securities are on loan? (Interest and dividends paid on the securities while they are on loan are paid to the lender.) Does the interest one can earn on the investment collateral adequately compensate for the risk associated with the possibility of broker insolvency? To be specific, does the lending institution's right to call at any time for additional collateral in the event the value of security on loan rises offer adequate protection in the event a borrowing broker goes into bankruptcy? What tax treatment will be accorded the interest earned on the collateral and the dividend and interest received during the period the loan is oustanding?

Closed-End Investment Companies

Do closed-end investment companies, when available at substantial discounts from net asset values, provide useful investment opportunities for endowment fund managers?

Does the fact that such funds pay management advisory fees make them inappropriate investments for institutions that are already paying management advisory fees? Assuming the fund's performance equals that of the market, will the dividend yield payable on the undiscounted value of the shares purchased make such funds an attractive investment, even allowing for the additional management fees?

Is there a significant danger that the discounts at which shares in such funds are now selling will not widen in the future? In such a case, the price of one's shares would fall even if the value of the fund's portfolio remained the same.

What is the explanation for the discount on the share prices of such funds?[25]

Bonds

What should be the percentage of the portfolio committed to fixed-income securities versus stocks? At current yields, are bonds now more attractive relative to equities than they have been for some time? A number of professionals argue that bond yields are currently far more sensitive to inflation than in the past and that high-yielding bond coupons are providing comparable total returns to equities. In the future, will fixed-income securities, in fact, fare as well or better than stocks when inflation is severe? Or, over long time periods, will equities continue to provide better total returns than bonds in order to attract investors? Even though stocks should provide a better return over the long term, should some portion of the portfolio be committed to fixed-income securities as a means of stabilizing portfolio return?

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[25] See Malkiel, **A Random Walk Down Wall Street**, pp. 261-2.

What dampening effect on volatility will different stock-bond mixes have and how will returns be affected given various assumptions about the future performance of these two markets?

If investment in fixed-income securities is increased, should one favor short-term cash equivalents (one year or less), medium-term securities, or long-term bonds?

Should one be willing to invest in higher-yielding but lower-grade bonds? A two-tier bond market has emerged. Might it be desirable to move to a diversified portfolio of somewhat riskier bonds (thus increasing the riskiness of the bond part of the portfolio)? This move could be offset by increasing the overall proportion of bonds, which are relatively less volatile than stocks, thus maintaining the general risk level of the overall portfolio.

In the case of short-term paper, should one be willing to invest in higher-yielding but less secure instruments or confine such holdings to paper whose payment is assured by the federal government? Although there may be no risk of non-payment in the case of treasury or other government notes, the higher yields of a diversified portfolio of less secure paper may offer better protection against the erosion of the purchasing power of the short-term segment of the portfolio during periods of high inflation.

Real Estate

Should equity investment in real estate be considered for its profit potential and for its potential as an inflation hedge? The information about returns from equity investment in real estate is now largely anecdotal. Is the evidence available concerning the relative returns and riskiness of equity investment in real estate versus common stocks or bonds sufficient to justify inclusion of this investment vehicle in the portfolio?

Is the potential of equity investment in real estate to generate higher rates of return than common stocks primarily a function of the high debt leverage available for real estate ventures? Will such leverage continue to be available for future investments?

Or is real estate, unlike stocks, such a highly inefficient market that certain investors, possessing a combination of financial resources and specialized expertise, can expect to identify a series of particular investments that will, measured as a whole, outperform stocks even on a risk-adjusted basis?

Do returns from equity investment, in at least some types of real estate, move in parallel with the price levels of the stock market, or are investment returns from these two markets uncorrelated? If some types of real estate returns are, in fact, uncorrelated with the stock market, then this investment medium could offer an opportunity to lower the overall volatility of the portfolio even if it did not offer the prospect of better returns than stock investment.

If one is prepared to invest in real estate, should such investment be directed toward the purchase of existing properties available at 'bargain' prices or the financing of new developments?

How can an endowment organize or obtain the array of expertise needed to make equity investments in real estate? Can such a fund avoid becoming embroiled unduly in the active management of the projects in which investments are made?

What methods should be employed to select investments for the portfolio?

Should a portfolio of stocks be constructed on the basis of conventionally accepted methods of securities analysis or should a strategy be adopted, in whole or in part, of buying a broadly diversified pool of equities to correspond to the market on average, carefully controlling turnover and management fees?

Assume, for example, that a commingled (pool) fund has been formed to invest in all the stocks in Standard & Poor's 500 stock index in exactly the proportions used to compute the index (so its performance would virtually equal that of the index at all times) and that the fund incurs negligible transaction costs and low management fees: What portion, if any, of a stock portfolio should be invested in such a fund?[26]

If an endowment invested in such a fund, would not trustees still be obligated by law, or simply as a hedge against flaws in theory, to continue to appraise on the basis of all information available to them the prospects of the individual companies whose securities were purchased?[27]

If it is determined that fixed-income securities should continue to play a role in a portfolio, should the portfolio of such securities be 'actively managed,' that is, should maturities of a fixed-income portfolio be adjusted according to estimates of interest rate trends? Should one seek sectors which may appear to be be 'undervalued' (e.g., prime utility bonds versus prime industrials)? Should one seek opportunities to find disparities in the pricing of bonds of equivalent grade?

[26] A number of index funds as well as pension funds have now in fact been created by professional money managers. See 'More Pension Funds Try to Tie the Market instead of Beating It,' **Wall Street Journal**, 12 November 1975, p. 1.

[27] For a discussion of legal issues pertaining to investment by fiduciaries in such funds, see John H. Langbein and Richard A. Posner, 'Market Funds and Trust-Investment Law,' **American Bar Foundation Research Journal**, vol. 1976, no. 1, January 1976.

What limits should be established on the turnover in the portfolio?

Should risk measurement techniques be employed to help determine the composition of the portfolio and to appraise performance? Do such techniques provide a dependable method of evaluating whether a portfolio's stock returns are a function of its risk level or of the selection of stocks that are out- or underperforming securities of equivalent risk? Can the riskiness or volatility of a portfolio relative to the market, calculated on the basis of historical relationships, provide a dependable method of projecting future correlations?

Day-to-Day Portfolio Management

Although this volume emphasizes the importance of trustees' setting policy and strategy, there is a question whether trustees would be better advised to refrain from active involvement in the selection of individual investments and to delegate such responsibility, under appropriate guidelines and review, to a professional money manager.

The Alternatives for Investment Selection

Based on our interviews and analysis of the endowment management systems of other universities, there appear to be three basic alternatives for making investment selections:

1 Approval, in advance, of all transactions by an investment committee of the board of trustees aided by an investment advisor.

2 Delegation of investment discretion to one or more investment advisors under policy guidelines established by an investment committee.

3 Delegation of investment discretion to a staff especially organized by the university for this purpose, along one of the following lines:

a formation of a separate corporation (a 'captive firm') devoted entirely to handling the university's investments;

b formation of a separate corporation that services the university's account and others; or

c hiring of a staff employed directly by the university.

Option 3 is one that only institutions with rather sizeable endowments can consider; for other institutions the cost of such an approach would be too great, relative to the value of the assets under management.

The Alternative of Advance Trustee Approval of All Transactions

Those in favor of this system of portfolio management point out that it encourages active trustee involvement in the direction of the portfolio and thus promotes close oversight of the endowment by trustees.[28] Also, the system may possibly reduce investment advisory costs because responsibility for selection is vested with the trustees rather than the advisor.

The arguments advanced by various authorities against this approach and in favor of having trustees delegate the selection of investments, under appropriate guidelines and supervision, to professionals hired for this purpose, rest on four concerns.

1 The types of securities in which one invests and the general policy guidelines established are far more important than the individual securities selected. The trustees can better concentrate their main energies on such policy concerns if they do not also select individual securities. There is always the risk that preoccupation with day-to-day operations can distract trustees from critical policy choices.

2 Vesting the responsibility for selection of individual investments in a given trustee or group of trustees can, in the case of unsatisfactory performance, present the awkward situation of having to remove a trustee or trustees as portfolio manager. Obviously, it would be far easier, should results prove to be disappointing, to discharge hired employees than to move trustees aside.

3 The experience of a number of universities indicates, entirely apart from the risk of embarrassment that can result if a trustee fails to perform day-to-day operations in a satisfactory manner, that it is unwise to involve trustees who are responsible for the basic governance of a university in such operations. Merging the operational and policy-making roles of a trustee can deprive a university of the detachment from operations that is vital to the setting of sound policy.[29] Indeed, if trustees engage in selecting individual stocks and bonds, there is also the risk that they will become wedded to one field of investment and may overlook opportunities in alternative fields. This kind of problem has indeed led many large institutional investors to separate policy-making functions from day-to-day portfolio management.

4 Charges of conflict of interest might be asserted if a university's endowment were managed by a trustee who also had a responsibility for managing a private fund, as has been common practice in the past. If the two funds were to work together on a

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[28] Seven of the ten universities we surveyed have delegated a substantial amount of discretion to make investments to their advisory organization.

[29] As George Putnam, Treasurer of the Harvard Corporation and in charge of the university's investments, observed in explaining Harvard's decision to establish a captive firm to manage the day-to-day operations of the Harvard portfolio:

> *Traditionally, the Treasurer has been the portfolio manager. What the Corporation wanted to do this time was to be sure that, in this world where portfolio management is very closely measured, the Treasurer was not the portfolio manager. He could then be entirely objective in looking at what kind of job was being done for the University's assets. And that's why I don't make my office at Harvard Management Company or within the University. I'm the Chairman of the Board of Directors of the Harvard Management Company. But I'm independent of the money management; I don't make buy-sell decisions. So the Corporation has the Treasurer on their side when it comes to evaluating performance and [is] not in the position of defending his investment judgment.*
> (**Harvard Gazette**, 17 January 1975, p. 4.)

transaction, questions could be raised with respect to a conflict of interest on the part of the trustee or the university.

Trustees need not, and should not, ignore altogether the securities purchased by the investment advisor. Trustees can establish an 'approved' or 'eligible' list from which the advisors may select securities, or trustees can review transactions of the advisor on a post-transaction basis, requiring reversal if they believe a serious error has been made. But, in our view, control over portfolio performance by trustees does not require approving or disapproving, in advance, every purchase or sale of stocks and bonds. Establishing an articulate investment philosophy for the advisor, and periodically reviewing the advisor's transactions, will achieve the kind of control trustees want and should have.

The Alternative of Delegating Investment Selection to an Established Advisory Firm

The delegation of discretion to make specific investment decisions to established professional advisory organizations is often urged as the best way to bring professional money management skills to bear on the selection of investments. The following considerations should be evaluated in determining whether to pursue this alternative.[30]

Importance of Management Expertise

There seems to be considerable agreement within the investment community that competition to find attractive stocks has become increasingly severe, and that the research capacity of brokerage firms is being cut back under the pressure of negotiated rates. From this, a number of professionals in the investment field conclude that successful investment in the future will require even more sophisticated stock selection techniques, in-house professional research capacity, and skill in negotiating trades, as well as an investment team that can work in close coordination and has a wide spectrum of expertise. If this analysis is valid, then a university should seek an organization having a critical mass of these skills. On the other hand, one could conclude that the intensified competition to find stocks makes it harder than ever to identify, on a consistent basis, securities that are overvalued or undervalued by the market. If this is the case, then a university should seek a system of investment selection for publicly traded securities under which portfolio managers would concentrate their time and energy primarily on selecting a portfolio that meets the risk and composi-

[30] We include within this second alternative the option of investing in the Common Fund. This fund was established to enable colleges and universities to pool their investment assets and is run by an independent board of trustees selected by the fund participants. Currently, the fund trustees delegate discretion to select securities to a number of professional investment advisory firms.

tion criteria established by the trustees and also minimizes management and transaction costs. Of course an in-house or captive firm might better meet this latter objective for sizeable endowment funds, although a number of professional money managers have now established so-called index funds.

Costs

The fees of professional money management firms are generally presumed to be negotiable, particularly in the case of a portfolio in excess of $100 million. Such fees may, depending on the advisor retained, include the cost of custodial services. Our investigation indicates that one can expect to pay anywhere in the range of .16 to .3 percent of asset value to an established firm for management of a portfolio of stocks, bonds, and short-term funds, depending on the firm selected and the size of the fund assigned to the firm. (Fees are generally scaled according to the amount of funds under management with the percentage rate decreasing as the size of the fund increases.)

Management costs should be a factor in selecting advisors, at least in the case of stocks and bonds. The accumulating evidence is that one cannot identify with any genuine confidence a firm that will prove to be a superior performer in managing common stocks and bonds.[31] This argues for taking into account significant cost differentials in selecting an advisor (provided lower costs are not a substitute for basic competence). There is some evidence that for portfolios over a certain size a captive firm or in-house staff approach could prove less costly than retaining an established advisory firm.[32]

Priority of Service and Conflicts of Interest

Receiving first priority from an investment manager in terms of buying or selling securities can make a difference at the margin in the profits generated from endowment management. When a firm must choose whose shares will be bought or sold first, one would like to feel that the university's stock would be part of the first block of shares bought or sold. The risk in having an outside manager is that unless a university's portfolio represents a dominant portion of the firm's business, it may not receive priority of service. There is, of necessity, a potential conflict of interest situation whenever an advisor works for more than a single client.

Ease of Trustee Coordination and Supervision

In choosing to delegate authority and yet retain control over policy there is an inherent risk of friction between trustees and managers. In the case of an established firm having many clients and views and a style of its own, the possibility of deviation from performance objectives set by the trustees is in the nature of things somewhat greater than with an endowment managed by a staff devoted only to servicing a single fund and directly responsible to the fund's trustees. If trustees give an independent firm too much freedom, then they can no longer exert their proper role in setting investment policy. If, on the other hand, trustees do not give the advisory firm enough freedom, then the firm may say with some justification that it cannot be held accountable and that it was prevented from really 'performing' in the way it did for other clients.

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[31] See page 57, Appendix A.

[32] See pages 41-3.

Avoiding Putting All One's Eggs into One Basket

A number of persons have urged that a university not rely on one group to carry out the day-to-day management of the portfolio, regardless of whether the choice is made to delegate discretion to an existing outside firm or to establish the university's own investment organization. Rather, it is argued that a university should select several managers because a single advisor cannot provide a sufficiently broad perspective and point of view. Moreover, as any organization can suffer from loss of key personnel, internal discord, or a period of sub-par performance, a university should try to minimize such risks by selecting a number of groups to handle different segments of the portfolio. It is asserted that although one cannot perhaps select with confidence one advisor who will consistently obtain superior results, one can expect that if a group of, say, four is chosen, two will sufficiently outperform the market not only to offset the inferior performance of the other two firms, but also to put the portfolio as a whole modestly ahead of the game.

These purported advantages need to be weighed against the drawbacks inherent in the multiple-manager approach. We are talking here about the selection of more than one manager to handle investment in the same media (e.g., common stocks) and not the diversification of advisors to manage investments in different markets requiring distinctive expertise (e.g., common stocks and real estate). Studies indicate that a combination of managers investing in the same area is no more likely to outperform the market than a single manager. On the other hand, these arrangements have usually encouraged managers to shoot for short-term performance resulting in increased portfolio turnover and unnecessary risk taking. Even though the purpose of the experiment may be to determine if the philosophies of trustees and the managers are compatible, the firms are likely to act as if they will retain the university's account only by obtaining superior one- to three-year results. As one professional money manager observed in expressing strong reservations about the multiple-manager approach: 'In such a situation, the competition can get out of hand. In seeking performance, the competitors can easily ignore risk.'

Certainly, the problems of coordination and supervision by the trustees will be compounded if the endowment is divided among several firms who are assigned to invest in the same investment media. Such a structure is likely to be less responsive to the wishes of the trustees and can easily lead to trading for the account that may be at cross-purposes. Moreover, if the portfolio is split into too many pieces, the segments assigned to managers may not be large enough to insure that a university will obtain priority of service from its investment advisors but may increase the costs of management (as fees normally increase in percentage terms as the size of the funds under management decreases).

Possibly some of the benefits of diversification of managers can be achieved, and at the same time its pitfalls avoided, by dividing the management of the portfolio according to fields of investment. For example, a university might retain one manager for its common stock portfolio and a separate specialized manager to handle bonds, or assign the management of stocks and bonds to one organization and retain another manager for investment in specialized media such as real estate. This form of diversification should minimize unhealthy competition, and also might bring to a university the broader perspective available from dealing with a number of money managers.

Capability in the Execution and Negotiation of Transactions

As noted above, the cost of buying and selling a security, that is, going out of one security and into another, has, in the case of common stocks, been estimated to run as much as 7 to 8 percent per complete transaction. However, possibilities for reducing transaction costs have increased substantially in recent years with the growth of the 'third' and 'fourth' markets, the creation of automated quotation systems for over-the-counter trading in listed stocks, and the negotiation of commission rates. Consequently, skill in executing trades may become an increasingly important part of portfolio management. There is no reason to believe, however, that the services of a skilled trader could not be made available regardless of whether an external or captive firm is employed to select investments.

The Alternative of Delegating Investment Selection to a Staff Organized by an Institution

Seven of the ten universities we surveyed employ their own investment staffs or use some form of captive or semi-captive firm, rather than employ outside managers. They have done so primarily for three reasons:

1 A conviction that the university can select a staff of its own of equal, if not greater, quality than that offered by established organizations and one that will concentrate all of its energy on servicing the university.

2 A belief that the costs of operating the university's own firm or staff will be somewhat less than the fees charged by established outside firms.

3 A desire to maximize trustee control over the policy governing the endowment and to insure that the persons charged with day-to-day management of the portfolio will be responsive to the trustees' directions and that there will not be an excessive focus on short-term performance.

Technically speaking, if a university assembles its own investment staff and hires them as regular employees of the university, it is forming an 'in-house' management staff. If it organizes such a staff within a corporation which is legally independent but wholly controlled by the university, it can be said to be forming a 'captive' firm. However, the difference between the two approaches is one of legal form rather than substance. We see the costs of either form of organization as being essentially the same. The separate legal entity may serve to minimize either potential friction within the university community over the higher salaries generally paid professional portfolio managers compared with university faculty and staff or to provide some insulation against the investment staff being drawn too heavily into university affairs. But these nuances aside, we see the in-house staff and captive firms as functional equivalents and hence below use the term 'captive organization' to encompass either arrangement.

Formation of a Captive Organization

To consider a captive organization model, a university's endowment must be of considerable size or the costs of such a system will be out of proportion to the value of the assets being managed. Our own calculations below assume an endowment of some $500 million but this is not necessarily the minimum size fund for which a specially organized staff would be economically feasible. In our survey, we found universities with endowments in the $250-$300 million range that had considered it economical, as well as advantageous for other reasons, to establish either an in-house or captive firm management structure.

As we envision a captive organization, it would operate under very clearly defined trustee guidelines for investment policy, particularly with respect to risk level and the composition of the portfolio. Although the organization would have discretion to select individual securities on its own authority, the object would be for the firm to operate in a manner fully responsive to the investment strategy mandated by the trustees.

Assuming a total endowment of $500 million (including short-term funds), the bulk of which is invested in common stocks and fixed-income securities, it would appear that setting up a captive organization could easily be accomplished. One possible form of such an organization is shown below:

Possible Organization of Captive Management Organization

President	$ 90,000
3 Portfolio Managers @$60,000+	190,000
Trader-Manager of Ancillary Operations	40,000
Staff (3 persons)	40,000
Rent and fringe benefits (at 20 percent of base salaries), office overhead, etc.	140,000
Total	$500,000

The above numbers do not include an incentive compensation program that might be necessary, the cost of the equipment to furnish the office, or custodial fees.

The proposed organization envisages two common stock portfolio managers and one fixed-income securities manager. The trader would place orders and engage in ancillary operations such as stock lending, etc. The fixed-income manager would control both long- and short-term fixed-income securities.

No research *on individual securities* would be done in-house. It is anticipated that such research would be purchased from outside brokers with commission dollars. We recognize that, with fully negotiated rate setting standard practice in the industry, the availability of 'soft' commission dollars could disappear. Nevertheless, we doubt that nonprice competition would be completely eliminated and we believe that some research services would continue to be available for commission dollars. In any event, research could always be purchased for 'hard' dollars, although this would increase the cost of a captive firm. If trustees believe personnel need to be hired to evaluate street research or develop independent analysis, this would add to the costs of the firm. At the same time, the experience of other universities indicates our salary estimates are generous, and a lower budget for salaries might be feasible.

The structure of the proposed captive organization reflects our view both that trustees must make the strategic choices and that the stock and, increasingly, the bond markets are sufficiently efficient that expensive efforts to identify under- or overvalued securities are not justified. The arrangement we envision could prove less expensive than the selection of an established outside advisory firm. A captive organization, as outlined above, would cost a university about .1 percent or $500,000 on a $500 million portfolio, plus custodial fees. This is $300,000 less, before custodial fees, than our estimate of the lowest range of costs (.16 percent) of an outside manager for a similar size portfolio. This differential could prove somewhat more or less than we have estimated depending on the fee one might actually negotiate with an outside advisor and the actual amount of several costs of a captive organization that we have not been able to include in our calculations here.[33]

Advantages of a Captive Organization

We believe there are several advantages to the establishment of a captive organization.

Ability to Attract Top Investment People: A captive investment group can attract some of the very best investment analysts available for several reasons. Working for a small organization, where the staff's full effort is expended on portfolio management and little time is spent on sales or administration, would be extremely attractive for many money managers. Moreover, a working connection, even indirectly, with a university could be a powerful attraction to mid-career portfolio managers. Certainly, the experience of the universities we have surveyed who have chosen this route suggests this is the case.

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[33] See the note with the table above.

Ease of Trustee Control: A captive organization servicing only its parent university could be expected to develop a special rapport and intimacy with trustees, greatly facilitating trustee control of policy implementation. Of course, the converse could prove a problem; namely, a captive organization may have difficulty in carving out a sufficient degree of independence from trustees in the selection of individual investments.

Ability to Manage Ancillary Operations: A captive organization would be effective in managing ancillary operations such as stock lending. It is also possible that such an organization could effectively engage in option writing should a university decide to move into this activity.

Aiding the Trustees in Making Policy Decisions: A captive organization could prepare reports focusing on the important strategic decisions which trustees need to make. This may be a genuine advantage since there appear to be few established firms that render systematic advice on portfolio policy and strategy. Indeed, a good number of established organizations, by virtue of their organizational commitments to certain areas of investment, may find it hard to offer detached advice on such questions.

Exclusive Focus: The organization would be designed to service only the university's account at least for some time. We believe this concentration of focus is important if the firm is to provide the conceived advantages to a university and to avoid the pressures inevitably accompanying the solicitation and servicing of new clients. Indeed, to begin by forming a firm that tries to serve multiple clients would be akin to selecting an outside manager or managers. (After the organization has been functioning effectively for some time, a carefully controlled expansion of clientele might be considered to spread costs and to provide some diversity of activity for the staff.)

Disadvantages of a Captive Organization

Creating a captive firm would impose a number of special burdens on trustees and involve certain not insignificant risks:

1 A substantial input of time and effort is likely to be involved in establishing an entirely new organization. A staff must be selected that is not accustomed to working together, and there are other difficulties in getting a new organization established and working effectively. Apart from the time it takes to organize such a

new venture, it may turn out that the chemistry of the personnel selected may not harmonize and the organization thus may not function effectively for some time. Even if a university is ultimately successful in putting together such an organization, it may thus have to bear a substantial 'start-up cost' while the organization is getting off the ground.

2 Trustees would have to assume responsibility for the oversight and administration of the organization (including such matters as compensation and personnel policies). These can be troublesome problems to deal with, particularly if it becomes necessary to reorganize a captive organization in an effort to improve its performance.

3 In the event that the group's record does not prove satisfactory, it may be considerably more difficult to make a shift to a new team of advisors than if one were employing an outside firm which proved unsatisfactory.

4 If one is convinced, as discussed at page 41, that the selection of investments will require in the future extensive in-house analysis of individual securities, it is unlikely that a critical mass of research talent can be assembled within a captive firm without the costs of the firm becoming prohibitive. Of course, if one believes that the primary focus of investment management should be on maintaining the risk level set by the trustees and evaluating opportunities for diversifying the composition of the portfolio to accomplish performance objectives rather than on analysis of individual securities, then the lack of in-house research depth in a captive firm will be less of a concern.

Some of those interviewed, who favor the idea of a university setting up a captive group, suggested that at least in the initial stage the management risk be divided with established firms. The object would be to offset the newness of the captive management team by assigning a small portion of the portfolio to a seasoned firm that could provide alternative perspectives as well as become a source of ideas and assistance to a captive organization. The desire to minimize the inherent risks of organizing a new advisory firm by allocating a segment of the portfolio to established managers is understandable. But, as pointed out on pages 39-40, such a multiple-manager approach may, in fact, subject a university's endowments to unwarranted turnover and risk taking if the competition between managers gets out of control.

Although final responsibility for policy decisions must be concentrated, trustees on whom this burden falls may, nevertheless, want access to a broad range of analysis and opinion. In our view, however, the disadvantages of a system of multiple investment managers are likely to outweigh any gain in bringing a diversity of viewpoint to trustees.

The kind of expertise required to help in making policy judgments concerning the portfolio might be added to the parent board of trustees, but given the requirement for diverse expertise and knowledge on such boards today, there may be limits on the number of persons with investment expertise who can be made trustees. One practical alternative for obtaining policy advice may be to establish an advisory group with expertise in finance and economics to meet with a trustee investment committee, on a periodic basis, to exchange views on policy issues and strategic choices. Such an advisory group could be made up of individuals of broad and varying perspectives and experience (including fields other than U.S. common stocks and bonds) and at least one person conversant with the latest developments in academic research relating to the capital markets. Above all, members ought to be flexible in their outlooks, not wedded to one mode of investment, and be the type of persons likely to enjoy this kind of interchange for its own sake.

In no sense should such an advisory panel be a substitute for a trustee investment committee. Responsibility for making decisions should remain unequivocably with a small trustee committee, but the advisory panel could serve as a source of ideas and cross-fertilization regarding changing conditions and opportunities in the capital markets. The advisory panel should serve only as supplement to, rather than as a substitute for, professional staff work on policy and strategy questions. Indeed, if trustees share our view that the future of portfolio management is going to center on policy concerns, then they ought to attach a high priority to finding professional staff support competent to examine such issues.

There are many fine portfolio advisory firms with talented staffs, but most of their resources are devoted to security analysis and the selection of investments. These firms, in effect, execute investment policy. Relatively few of them, however, engage in the art of counseling investors on such crucial matters as portfolio composition or the choice of policy with respect to risk level. Yet, given the overriding importance of such decisions, counseling on these matters may be the most valuable service professional advisors can render, particularly if, as we foresee, the future management of stock portfolios will entail more the skillful application of techniques for controlling the risk level of the portfolio and the choice among different types of investments than the study of individual securities that may be temporarily over- or undervalued by the market. A trustee investment committee should have access to professional staff capable of working on policy issues either provided by its advisory organization or as a special adjunct to the committee itself.

Summing Up

The Critical Policy and Strategic Choices

A central theme of this essay is that the attainment of higher long-term returns requires the assumption of higher risk (which we define earlier to mean the variability or fluctuation in investment returns). The crux of investment judgment lies in establishing the risk-return tradeoff appropriate to an institution's needs.

All universities are in urgent need of more currently spendable funds from their endowments and thus for high investment returns. No institution can accept somnolent endowment management. But universities cannot simply strive to maximize return and ignore risk since to do so could permanently damage their endowments. Accordingly, a balance between risk and return objectives must be struck and the choice of the risk level for the overall portfolio becomes as important as any decision made in respect to an endowment fund. Investment management, especially in this uncertain era, is thus in large measure the art of managing risk.

The pivotal strategic issues center on designing the optimal mix of investments to achieve the objectives set for the endowment. For most of the post-World War II era institutions that have committed the majority of their funds to U.S. common stocks, including a substantial investment in low-yielding stocks with the potential for significant capital appreciation, and have kept portfolio turnover low have enjoyed higher total returns than most institutions that have pursued different strategies. Our expectation is that institutions that in the future adopt such a determined stock-oriented strategy and carefully control turnover will continue to earn higher returns *in the long run* than funds that choose a more conservative investment mix. It is not simply past experience that leads us to this view, but the concept that in a market economy higher-risk media will provide the returns necessary to make them compare favorably with lower-risk alternatives.

Changes however are taking place in the world capital markets that require continuing evaluation of the spectrum of potential investment options. Institutions need to be alert to opportunities to reduce risk, without sacrificing return, through diversification into investment media whose price movements may not always conform with the price movements of U.S. common stocks. Consideration should also be given to special ancillary activities, such as stock lending, option writing, or investment in heavily discounted closed-end investment companies that may from time to time provide opportunities to help achieve portfolio objectives. Tight control over turnover and operating costs can also prove to be an important factor, at the margin, in improving portfolio return.

The view one takes of the efficiency of the stock and bond markets in valuing securities affects the method by which securities are selected for inclusion in the portfolio. The accumulating evidence that the market for stocks is reasonably efficient in valuing corporate securities raises the question whether professionals can consistently select individual stocks that will outperform the market for securities of equivalent risk. Such superior skill in picking stocks may exist and an institution may be fortunate enough to be able to select the manager who can consistently outperform his peers. However, modern risk measurement techniques, although not without some flaws, can assist trustees in evaluating whether the stocks selected do outperform the market for securities of equivalent risk. If the evidence shows that a university's investment manager cannot consistently discriminate between overvalued and undervalued securities, then consideration should be given to diversifying the portfolio to make it more closely conform with the general market, thereby eliminating the risk of trying to pick the 'right' companies.

In the case of the bond market, there may be opportunities for managers to anticipate interest rates or imperfections in the market valuation of such securities with more skill than their competitors. But we would expect those opportunities to diminish—if they have not already done so—as the market becomes more efficient.

Trustee Focus on Policy

The manner in which the policy and strategic questions enumerated in this volume are resolved, rather than the selection of individual securities, is likely to be the decisive factor within the control of the trustees of how well an endowment fares. Thus, policy questions must be decided by trustees. The investment questionnaire included at pages 27-33 of this volume identifies the type of issues trustees need to grapple with as matters of policy. Once made, policy decisions should not be revised simply to respond to pressure 'to do something' when short-term results are disappointing. It is the particular province of trustees to act on their informed judgment of the longer-run currents in our economy and society.

We, and all those with whom we talked, strongly endorse the notion that the overall and final responsibility for the direction of the endowment must be vested in a very small committee of trustees who are experts in the art of superintending investment portfolios and who have a broad-gauged understanding of a wide spectrum of finance. The number of members must be small in order to concentrate authority and clearly identify where responsibility lies. However, trustees should consider delegating responsibility for making individual investments under appropriate guidelines and procedures for review.

The Choice of an Advisor

An institution's principal professional investment advisor's own investment philosophy must be entirely compatible with that of the trustees, and the advisor must be completely responsive to trustee policy direction. An endowed institution with a sufficient aggregation of assets can choose between either an established advisory firm for whom the institution is the primary client or a captive advisory organization to manage the day-to-day business of its portfolio.

In comparison with employment of an outside advisor, a captive firm could prove somewhat less expensive and attract equally able persons. A captive firm, without a vested stake in a particular investment style, could be more readily directed to tailor its energies to suit a university's investment needs and objectives as they may evolve over time and, even more importantly, provide the staff-level analysis of policy issues which few established organizations appear to offer. But a newly organized captive firm would require more trustee oversight and would be subject to the risk inherent in the initiation of any new venture. It could also be awkward, if not difficult, to disengage from a captive firm if it proved to be a disappointment.

If a university wishes to develop the capacity in its management advisory structure to invest in a broad spectrum of media, it will need to select either a general advisor with specialized expertise in fields other than common stocks or add advisors with special skills in other areas. Such an approach is quite different, however, from selecting multiple managers to handle the same type of investments. This latter course could cause genuine difficulties for trustees in coordinating investment activity, lead to unnecessary portfolio turnover and risk, and result in a performance race among the managers. These disadvantages in all likelihood will outweigh the value of selecting several advisory firms in order to avoid putting all one's eggs into one basket.

Investment Philosophy Is the Decisive Factor

Our survey indicates that the universities that have experienced the most disappointing results were, in general, the ones where trustees failed to establish adequate policy and strategic guidelines for the investment of endowment funds. Indeed, we found sometimes a temptation to engage in rearrangement of advisory services when, perhaps, the most urgent need was to reexamine the basic investment philosophy of the university. We conclude from our survey that there is no single organizational approach to managing investments that produces superior performance. In the end, the choice between working with an outside advisory firm or a captive organization is going to prove less decisive than whether trustees develop a well-articulated investment philosophy for the management of the portfolio and monitor the investment advisor to insure adherence to the guidelines they establish.

Appendix A
The Risk-Return Tradeoff and Its Applicability to Endowment Management

This appendix reviews the evidence that has been accumulated to establish the relationship between risk and reward and to suggest that our modern stock and bond markets are highly efficient mechanisms. We believe that the research establishing these findings has important implications for the way a university should select its overall investment strategy and for the particular management structure it should choose.

The Relationship between Risk and Reward

As we have mentioned in the text, an accepted modern principle of investment is that higher average long-run returns can only be achieved by the assumption of greater risk or by variability in returns. The particular risk measure now widely used is an index of relative volatility, which is also widely known by the Greek letter beta. The beta calculation of riskiness is essentially a comparison between the movements of returns from any individual stock (or portfolio) and the movements of returns from the market as a whole.[34]

The calculation begins by assigning a beta of 1 to a broad market index, such as the NYSE index or the S & P 500. If a stock (or portfolio) has a beta of 2, then *on average* it swings twice as far as the market. If the market goes up 10 percent, the stock rises 20 percent. If a stock has a beta of 0.5, it tends to be more stable than the market (it will go up or down 5 percent when the market rises or declines 10 percent).[35] Professionals often call high-beta stocks aggressive investments and label low-beta stocks as defensive.

The following chart illustrates the relationship between the performance of a large number of common stock funds and relative volatility as a measure of risk. Because the numbers are, for the most part, averages of many funds, the relationship between risk and reward is startlingly tight. The results show very clearly that over the long pull high-volatility portfolios have provided larger total returns than less risky ones.[36] Similar charts can be constructed for individual funds.

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[34] There are two kinds of variability measures: an overall measure such as standard deviation (which measures the dispersion of returns from the mean) and a measure such as beta (or relative volatility) which measures the response of the portfolio to swings in the general market (so-called market or 'systematic risk'). In the case of a well-diversified portfolio, studies indicate that beta (volatility relative to the market) will account for almost all of the variability in a fund's rate of return, see Sharpe, 'Adjusting for Risk in Performance Measurement'; Williamson, **Performance Measurement and Investment Objectives for Educational Endowment Funds**, p. 41.

[35] The calculation is usually done in terms of re-

(continued on next page)

[36] No bond portfolios have been plotted on the

(continued on next page)

Volatility Versus Average Annual Return: Ten Years 1964-1973

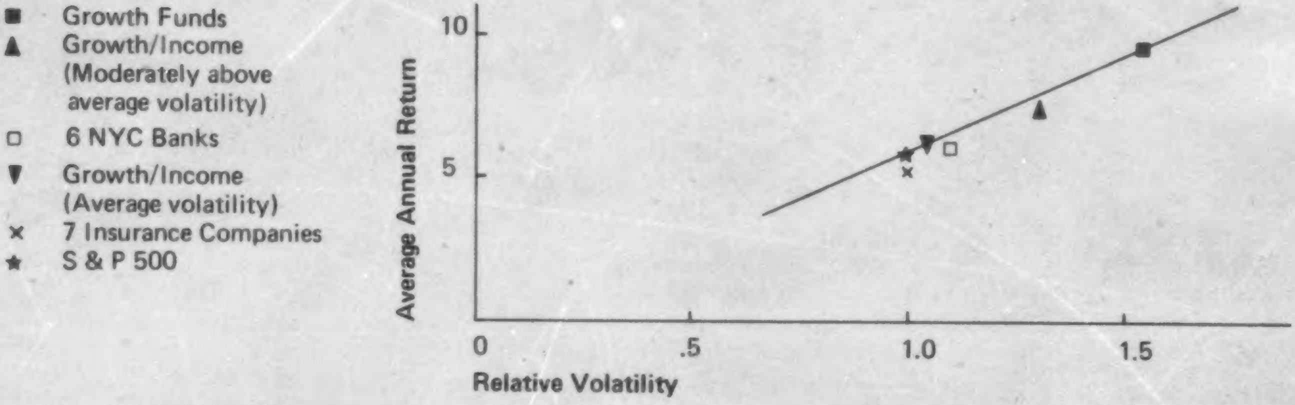

Chart prepared by Douglas A. Love for Prudential Insurance Company

(continuation of 35)
turns, that is, price changes plus dividends expressed as a percentage of the initial price. Over the short run, however, price swings are the most important determinant of returns.

(continuation of 36)
chart. Comparable results for an average of eleven balanced portfolios containing both bonds and stocks are available, however. They show an overall return of about 5 percent and a relative volatility of 0.8, i.e., they tended to be more stable than a portfolio made up of the S & P average and also to produce a lower rate of return.

Whether the study is done for bank trust departments, pension funds, or mutual funds, the relationship has always come out the same. High rewards go along with large risks.

The reason that volatility seems to accord well with our more intuitive notions of risk is that when the market goes down it is the high-volatility funds that do so much worse than average. The next table shows the breaking down of the ten-year performance of the above funds into two sub-periods, the six years when the market went up, and the four years when it went down. In 'up' years, high-volatility portfolios well outdistanced the low-volatility ones. (Since the market was higher in 1973 than 1964, this same relationship held over the whole period.) In 'down' years, however, the high-volatility portfolios did considerably worse than the low-volatility ones, and, as might be expected, in the sharp bear market of 1974 the higher-risk portfolios took the most painful beatings of all. This is why it is so important to consider the risk level of the portfolio in formulating overall investment strategy. Decisions regarding the general categories of securities placed in the portfolio (e.g., stocks versus bonds) and the risk level of the particular securities selected (e.g., aggressive, high-volatility, growth stocks versus defensive, low-volatility stocks) are far more important than decisions regarding which particular stocks in a given category are added to the portfolio.

Volatility Versus Average Annual Return

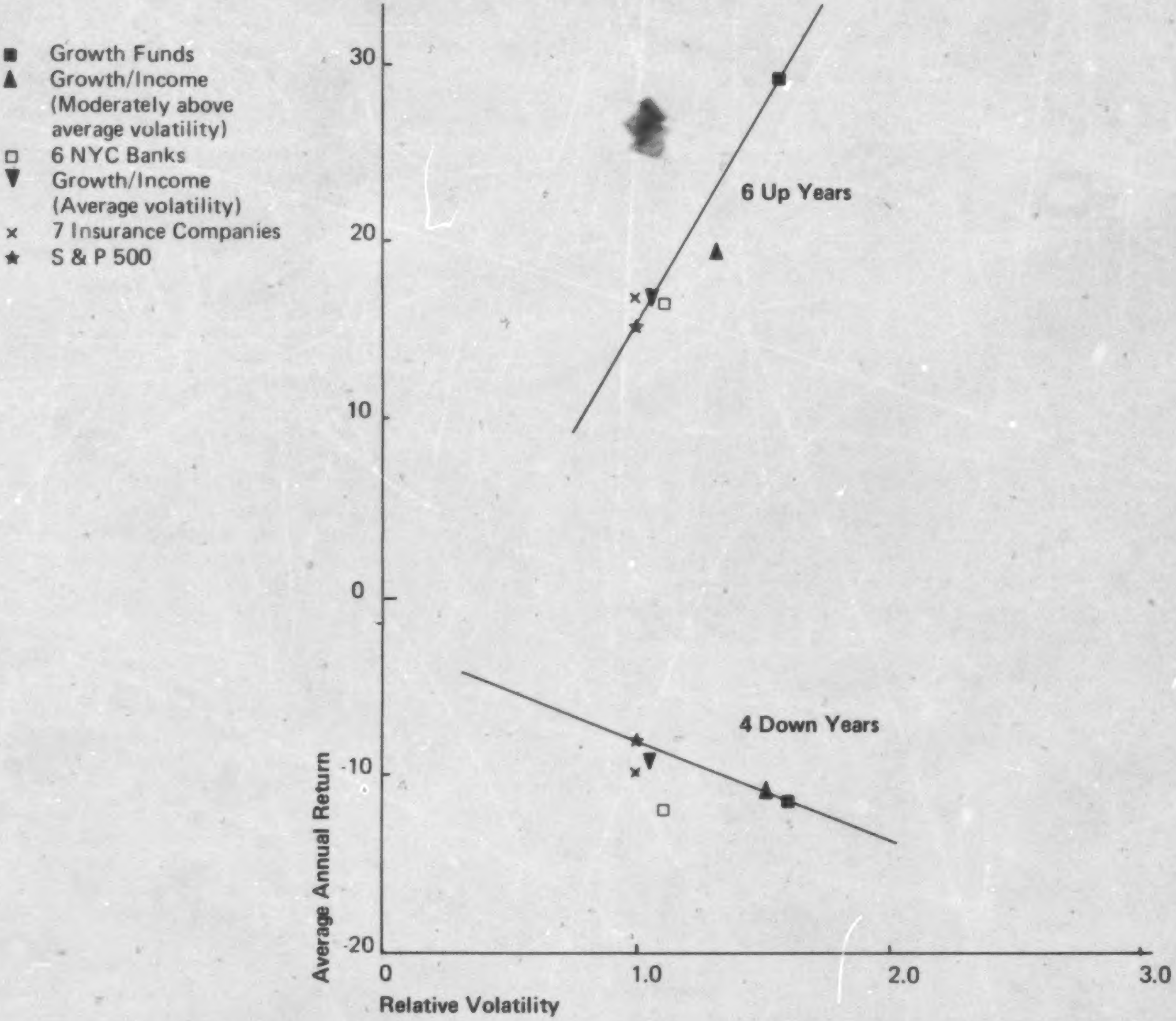

Chart prepared by Douglas A. Love for Prudential Insurance Company

The Efficient Market Theory

The general relationship between risk and reward is widely known as the 'efficient market' theory. The essence of the theory is that the only way above-average returns can be achieved is through the assumption of greater risk. The idea behind the theory is the notion of arbitrage. If two stocks or two bonds are considered by the market to have equal risk, then both must promise the same return. If not, an arbitrage opportunity would be created. If, for example, the bonds of New Jersey Bell Telephone yielded fifty basis points more than similar bonds of Mountain States Bell Telephone, investors would sell the latter and buy the former until their anticipated yields were driven to equality. On the other hand, the market would still be in equilibrium if two bonds or stocks with different risk levels produced different returns. This says simply that the market can be in equilibrium with the bonds of Georgia Power yielding 10 percent while bonds of a government agency yield 8.5 percent. The extra 1.5 percent promised yield on Georgia Power does not create an arbitrage opportunity. It is simply the reward the market provides to the investor for bearing extra risk.

The theory maintains that in a 'perfectly' organized market, such as the stock market, the information that affects security prices is rapidly digested by countless analysts and quickly reflected in the prices at which securities are traded. No one can expect, except perhaps through inside information, to be consistently wiser in analyzing stock values than many competitors who have equal access to the same information. Proponents of an efficient market, in short, do not believe it is possible to identify systematically common stocks that have been undervalued and overvalued by the general market. They believe the market acts too quickly in digesting new data to enable even professional money managers to achieve consistently better returns than the market provides on average for assets of a *given risk level.*

For an investor to achieve higher returns than the market on average, one must hold a portfolio of stocks whose values will fluctuate with more volatility than those of the market on average (i.e., be riskier). In an efficient market—where all developments affecting individual companies are quickly reflected in the prices of their securities—the only risk for which an investor can expect to be compensated is that of accepting above-market-average fluctuations in value.

Put another way, there are two components of the risk of owning stocks. One part of the total risk relates to the impact of swings in the general market; this is so-called 'market risk' or, as portfolio theorists call it, 'systematic risk.' The second part relates to the variability of returns traceable to developments peculiar to one company—developments which can make a stock move independently of market trends. This latter risk is referred to as 'independent variability' or 'unsystematic risk.' Unsystematic risk can be eliminated by adequate diversification. Therefore, investors should not expect to be compensated for bearing unsystematic risk. The part of total risk that investors can expect to be paid for bearing is systematic risk, the risk associated with fluctuations of the market as a whole. Beta measures systematic risk and thus modern portfolio theory maintains that returns for stocks will be related to beta. As the systematic risk (beta) increases, so will the return an investor can expect.[37]

The efficient market thesis postulates that, although one cannot forecast swings in the general market with consistent accuracy, it is possible to predict how the return earned by a diversified portfolio of stocks will compare with the return of the market on average. By extrapolating from historical relationships between the reaction of individual stocks, or a portfolio of stocks, to general market swings, that is, by calculating the portfolio's beta, it is believed one can predict with reasonable accuracy how fluctuations in value of an overall portfolio of stocks will compare with the market as a whole.[38] More volatile portfolios (on the basis of past experience) will tend to rise more in bull markets and fall more in bear markets.

The theory does not deny that an investor can have better than average results through utilizing inside information. But tightened rules on disclosure make time lags in the dissemination of new information much shorter than they may have been in previous years. Of course, the more quickly information is disseminated to the public at large, the more closely the market may be expected to conform to the efficient market model.

Evidence concerning the inability of individual fund managers to outperform the averages (on a risk-adjusted basis) can be shown in the table below.[39] The table shows the top twenty funds, ranked according to performance in 1968, and then follows their record through the subsequent five years. The lesson the chart contains is clear. Although the results are made more dramatic by starting the study in 1968, similar conclusions would follow for all other years. It appears to be impossible to select managers who have had a good track record over one period and expect that track record to continue in the future. There seems to be no consistency in performance. Researchers suspect that the few cases of above-average performance, adjusted for risk, that one runs across in the market are probably due as much to luck as anything else.

[37] An investor can construct a portfolio with beta greater than the market on average—i.e., a beta of greater that 1.0—either by selecting high-beta stocks or by purchasing on margin a portfolio with a volatility the same as that of the market. See Malkiel, **A Random Walk Down Wall Street**, pp. 187-94.

[38] The degree of accuracy will depend on how well changes in the portfolio correlate with the changes in the market.

[39] There is a substantial body of evidence to the same effect. Economist Paul A. Samuelson has written: '*What is at issue is not whether, as a matter of logic or brute fact, there could exist a subset of the decision makers in the market capable of doing better than the average on a repeatable, sustainable basis. There is nothing in the mathematics of random walks or Brownian movements that (a) proves this to to be impossible, or (b) postulates that it is in fact impossible. The crucial point is that when investigators—or any foundation treasurer of fair-minded and serious intent—look to identify those minority groups or methods endowed with sustainable superior investment*

Some Results of the Performance Derby

1968 Rank	Fund	1969 Rank[1]	1970 Rank[1]	1971 Rank[1]	1972 Rank[1]	1973 Rank[1]	1968 Net Asset Value[2] Per Share	1973 Net Asset Value Per Share
1	Mates Investment Fund	312	424	512	465	531	15.51	1.61
2	Neuwirth Fund	263	360	104	477	397	15.29	8.01
3	Gibraltar Growth Fund[3]	172	456	481			17.27	
4	Insurance Investors Fund[4]	77	106	317	417	224	7.45	10.50
5	Pennsylvania Mutual	333	459	480	486	519	11.92	2.02
6	Puerto Rican Investors Fund	30	308	387	435		19.34	
7	Crown Western-Dallas	283	438	207	244	380	13.86	5.70
8	Franklin Dynatech Series	342	363	112	120	453	14.47	6.95
9	First Participating Fund[5]	49	283	106	27	220	19.25	19.51
10	Connecticut Western Mutual Fund[6]	5	202				127.27	
11	Enterprise Fund	334	397	133	364	250	11.88	5.70
12	Ivy Fund	357	293	233	161	312	12.37	6.73
13	Century Shares Trust	120	55	62	62	127	13.09	13.37
14	Mutual Shares Corp.	284	272	152	452	62	22.18	14.81
15	Putnam Equities Fund	376	384	45	54	354	17.05	8.37
16	Financial Industrial Income Fund	244	222	277	231	35	8.40	5.83
17	Consumers Investment[3]	354						
18	Columbia Growth Fund	33	322	27	370	332	14.23	11.88
19	Templeton Growth Fund	1	241	163	1	81	4.00	7.33
20	Schuster Fund	129	231	253	425	445	12.29	7.40

(1) Out of 381 funds surveyed in 1969, 463 in 1970, 526 in 1971, 537 in 1972, 536 in 1973.

(2) The net asset values for 1968 have been adjusted for all subsequent splits.

(3) No longer surveyed by Lipper.

(4) Insurance Investors Fund is now First Sierra Fund.

(5) First Participating Fund is now American General Growth Fund.

(6) Connecticut Western is now Channing Bond Fund, which is no longer surveyed by Lipper.

Source: Arthur Lipper Corporation

prowess, they are quite unable to find them. The only honest conclusion is to agree that a loose version of the "efficient market" or "random walk" hypothesis accords with the facts of life.' (Paul Samuelson, 'Challenges to Judgment,' **The Journal of Portfolio Management,** vol. 1, no. 1, Fall 1974, p. 17.) See also Lorie and Hamilton, **The Stock Market**; Malkiel, **A Random Walk Down Wall Street.**

Proponents of the efficient market theory also argue that the bond market has become increasingly perfect in recent years. The very presence of actively managed bond funds, and firms that monitor the market for arbitrage opportunities, implies that the bond market, too, will adjust to new information rapidly.

We also suspect that the real estate market conforms to the general proposition that higher rewards go along with the assumption of greater risks. In the case of real estate, however, we doubt that the market is nearly as efficient as it is for marketable stocks and bonds. Although fifty security analysts may study any particular common stock on the New York Stock Exchange, only a very few investors might be exposed to an offering of a particular piece of property. Thus, we would conjecture that the payoff for professional analysis and expertise may be much greater in real estate than for marketable stocks and bonds.

Qualifications to the Theory

Research has produced convincing evidence concerning both the general relationship between risk and return and the premise that no portfolio manager can consistently earn more than the average return appropriate for the risk level chosen. Nevertheless, the theory is vigorously disputed by many professional money managers.

Many professionals are convinced that through careful study of each company, appraisal of its management, and analysis of the likely effect of future economic conditions on the firm's business prospects it is possible to select a portfolio of stocks that can provide better than average returns. Although admitting that the requisite expertise is hard to find, they firmly believe they can demonstrate that superior analysis will be rewarded with superior performance.

Apart from the criticisms of professional money managers, there are a number of qualifications to the theory that would be admitted even by its proponents. For one thing, the measure of relative volatility, beta, does not always predict returns well in the short run. In 1972, for example, which was an up market year, it turned out that safer (lower beta) stocks went up *more* than more volatile securities, contradicting the theory. **Fortune** magazine commented on this well-publicized failure, 'The results defied the textbooks.' What happened was that in 1972 styles changed in Wall Street as institutional investors eschewed younger, more speculative companies and became much more enamoured with the most stable leading corporations of the highest quality in the so-called 'first tier' of stocks. It became clear that although beta might do a good job in predicting a long-run relationship, it could not be used to guarantee investors a predictable performance over periods of a few months or even a year.

In addition, there seems to be some evidence that, over the long pull, the incremental returns on high-volatility stocks and portfolios may not fully compensate investors for the extra risk. There seems to be a phenomenon operating in the stock market much like at the race track, where people tend to overbet long shots. Long shots seem to go off at somewhat shorter odds than their prospects seem to warrant. Thus, although beta is a serviceable measure of risk and a reasonably good predictor of return, it is far from perfect, and caution is required to insure that the tool is not oversold as the final answer to the problems of building portfolios and projecting their risks and rewards.

Other qualifications to the efficient market theory might also be mentioned. News does not always travel instantaneously, as believers in the efficient market theory suggest, and we doubt there will ever be a time in the future when all useful inside information is immediately disclosed to all. Moreover, it is difficult to accept that at any time stocks sell at the best estimate available of their intrinsic values. At times stocks do not appear to sell on the basis of anyone's estimate of value (as hard as this is to measure) but are often swept up in waves of speculative frenzy and, perhaps, unwarranted pessimism. In an environment where all information is not instantaneously available to everyone and where the translation of that information into a value instrument requires art as much as science, there would appear to be reasonable scope for an individual to exercise superior intellect and judgment and thus to turn in superior performance.

Candor also compels efficient market disciples to admit that, if *all* investors renounced individual stock selection and began to buy the market, the disciples would begin to pick stocks again. If no one acted to bid up the prices of individual stocks whose prospects had become more favorable, some securities might well sell for lower prices than their risk would warrant and it would be possible then to identify over- and undervalued securities.

Thus, the efficient market theory, like faith in individual security analysis, is not without its limitations. At a minimum, however, the available evidence should make us wary of placing too much emphasis on the chances of individual security analysis producing superior returns for a portfolio of common stocks. Even allowing for the qualifications of efficient market theory, the burden of proof to validate their claim would now appear to be on managers who assert they can consistently pick better stocks than their competitors. It is clear that persons who can consistently make superior selections of stocks are very rare and probably extremely difficult to find.

U.S. Equities

Equities constitute the major portion of the portfolios of many universities. The issue for the future is whether current and foreseeable economic circumstances call for a continuation of this policy.

Risks and Rewards from Equity Investing

Several authoritative studies have shown that funds put into common stocks for any considerable period since the twenties (including the Great Depression years) have done better than equal funds put into bonds. See for example the study of stock and bond returns for the period 1926-74 by Roger G. Ibbotson and Rex A. Sinquefield. The table on page 62 summarizes their findings for this period.[40] In general, stocks have earned a nominal rate of return, about 9 percent a year on average including both dividends and capital gains. If we start the measurement after sharp bear markets, the rate of return is considerably higher. Assuming that the future is anything like the past and that extra risk continues to earn extra reward, it does seem reasonable to assume investors will continue to earn more from stocks than from bonds.

It is also the case that equities have provided protection against inflation *over the long pull*. True, the relationship has been a very loose one and during some periods when inflation has risen especially rapidly, such as in the early 1970s, equities have provided no protection at all. (See 'Rate of Return' table on page 65.) Instead, they fell sharply in value as high interest rates and a fear of a profits squeeze drained money from the stock market. Indeed, the past ten years and the whole of the 1930s showed that stocks can be very poor investments for periods of as much as a decade. Still, at least historically over very long periods of time, corporate earnings, dividends, and stock prices have more than kept pace with living costs.

Stocks are considered risky because they can go down. The more volatile the return from any investment, the riskier it may be considered. Using volatility (particularly downside price movements) as a

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[40] We cite the Ibbotson and Sinquefield work because it covers the longest time period — from 1926 to 1974. Prior to the publication of this study probably the most frequently cited study of the performance of the stock market was the Fisher-Lorie article showing the month-by-month rate of return from 1926 through 1965 that would have been achieved if one held every stock on the New York Stock Exchange during that period of time. See Lawrence Fisher and James H. Lorie, 'Rates of Return on Investments in Common Stock: The Year-By-Year Record, 1926-65,' **Journal of Business of the University of Chicago**, vol. 41, no. 3, July 1968, pp. 291-316. The Fisher-Lorie study showed a geometric average rate of total return, with dividends reinvested, over the entire 1926-65 period, of 9.3 percent per year. The comparable Fisher-Lorie rate-of-return figure without rein-

(continued on page 63)

Selected Performance Statistics: 1926-74, from the Ibbotson and Sinquefield Study

Series	Annual Geometric Mean Rate of Return	Arithmetic Mean of Annual Returns	Standard Deviation of Annual Returns	Number of Years Returns Are Positive	Number of Years Returns Are Negative	Highest Annual Return (and year)	Lowest Annual Return (and year)
Common Stocks	8.5%[a]	10.9%	22.5%	32	17	54.0% (1933)	-43.3 (1931)
Long-Term Government Bonds	3.2	3.4	5.4	37	12	16.8 (1932)	-9.2 (1967)
Long-Term Corporate Bonds	3.6	3.7	5.1	39	10	18.4 (1970)	-8.1 (1969)
U.S. Treasury Bills	2.2	2.3	2.1	48	1	8.0 (1974)	-0.0 (1940)
Consumer Price Index	2.2	2.3	4.8	39	10	18.2 (1946)	-10.3 (1932)
Risk Premia on Common Stocks	6.1	8.8	23.5	31	18	53.5 (1933)	-43.7 (1931)
Maturity Premia on Long-Term Govt. Bonds	1.0	1.1	5.6	25	24	15.7 (1932)	-12.8 (1967)
Default Premia on Long-Term Corp. Bonds	.3	.4	3.2	28	21	10.5 (1933)	-7.2 (1974)
Common Stocks—Inflation Adjusted	6.1	8.8	23.5	31	18	53.3 (1954)	-37.4 (1931)
Long-Term Government Bonds—Inflation Adjusted	1.0	1.3	8.0	29	20	30.2 (1932)	-15.5 (1946)
Long-Term Corporate Bonds—Inflation Adjusted	1.4	1.7	7.7	31	18	23.5 (1932)	-13.9 (1946)
U.S. Treasury Bills—Inflation Adjusted	0.1	0.2	4.6	29	20	12.6 (1932)	-15.1 (1946)

[a] The annual geometric mean rate of return for capital appreciation exclusive of dividends was 3.5 percent over the entire period.

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Source: Roger G. Ibbotson and Rex A. Sinquefield, 'Stocks, Bonds, Bills, and Inflation: Year-by-Year Historical Returns (1926-1974),' **The Journal of Business of the University of Chicago**, vol. 49, no. 1., January 1976. ©1975 by the University of Chicago. All rights reserved.

For each asset shown in the table, Ibbotson and Sinquefield present total rates of return reflecting both dividend or interest income and capital gains or losses. The total return for common stocks is based upon the Standard and Poor's (S & P) 500 Stock Index. The total return of long-term U.S. government bonds for the period 1926-73 is derived by Ibbotson and Sinquefield from bond data from the U.S. Government Bond File at the Center for Research in Security Prices (CRSP). The bond files were compiled by Lawrence Fisher and consist of month-end price data on virtually all negotiable direct obligations of the U.S. Treasury for the period 1926-73. Data for 1974 were obtained by Ibbotson and Sinquefield from selected issues of the **Wall Street Journal**. Corporate bond returns for the period 1969-74 are derived by Ibbotson and Sinquefield from the Salomon Brothers monthly High-Grade Long-Term Corporate Bond Index; for the period 1946-68 by their backdating the index from Salomon Brothers' data; and for 1926-45 from the S & P monthly High-Grade Corporate Composite Bond Index assuming a 4 percent coupon and a twenty-year maturity. For the U.S. Treasury Bill Index, data have been obtained primarily from the CRSP U.S. Government Bond File. 'Risk Premia' shows the net return from investing in common stocks rather than bills. 'Maturity Premia' shows the net return from investing in long-term government bonds rather than bills (since U.S. government bonds and bills are not considered subject to default, and hence both are 'risk free,' the net return from investing in bonds rather than bills is seen as stemming primarily from their differences in 'maturity'). 'Default Premia' shows the net return from investing in long-term corporate bonds rather than long-term government bonds.

measure of risk, it is clear that equities have, in fact, been a fairly risky investment. Stock prices can and have declined as much as 30 or 35 percent in a single year. From the end of World War II through 1974, there have been seven occasions in which comprehensive indexes of stock prices have declined more than 19 percent in a period of twelve months or less and ten periods of twelve months in which the market has risen by more than 20 percent.[41] The decline in the market from its peak in January 1973 through September 1974 of approximately 40 percent in the level of the popular stock market averages, such as Dow-Jones and Standard and Poor, is the most dramatic change in stock prices during a brief period since the 1930s, even exceeding the 37 percent decline in such averages between May 1969 and May 1970 and the 39 percent decline from April 1942 through May 1946.[42]

Recent Doubts as to the Continued Wisdom of Maintaining a Largely Equity-Oriented Portfolio

The two steep bear markets within a four-year period have caused many professionals to feel that the stock market has become even riskier (more volatile) than ever before. In contrast, we have pointed to the historical performance of stocks, especially relative to fixed-income securities, over long time spans. But this appeal to the long-run returns from equities may not be satisfactory to everyone. (As Lord Keynes once said, 'In the long run we are all dead.') Certainly, historical trends may provide little comfort to investors who have seen their capital shrink drastically in value in recent years.

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vestment of dividends is 7.3 percent for 1926-65. However, return figures with and without dividend reinvestment are essentially the same for periods other than those which include the depression years of the early 1930s. This is not surprising, because the

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[41] Lorie and Hamilton, **The Stock Market,** p. 6.

[42] The Dow-Jones and Standard and Poor averages are weighted by the size of the company's equity at market value. The New York Exchange index is unweighted and the average stock on the Exchange has fallen considerably more than the popular averages.

The dissatisfaction with equities goes deeper, however, than impatience with their performance over any particular period. Some investors have convinced themselves that equities will no longer provide the same returns as in the past. Indeed, such a sentiment was widespread when we conducted our interviews during the summer of 1974.

The stock market in recent years has given even those with steady nerves moments of doubt as we discussed on page 16. But as we also pointed out, bad news about corporate earnings and fears about the continued profitability of business investment or the oil crisis will not be reflected in stock prices at some time in the future—they are reflected in the market immediately.[43] If investors perceive that the risks of investment in common stocks have increased, equities won't fall in the future. Stock prices will fall promptly to provide the higher returns necessary to induce investors to hold them.

How the Market Adjusts

Perhaps a reference to the behavior of the stock price of New Jersey Public Service Electric and Gas in recent years will serve to indicate how the stock market adjusts to changes in discount rates and in the outlook for individual companies.

One can obtain some idea of the anticipated rate of return from equities by questioning professional security analysts concerning the rate of earnings and dividend growth they anticipate for particular companies. Such anticipations have been collected for a large number of years through Princeton's Financial Research Center. During late 1972, when bonds of high quality were yielding 7.5 percent, the common stock of Public Service Electric and Gas produced a dividend yield of 6.5 percent. The consensus of Wall Street's utility analysts at the time was that PSEG's earnings (dividends) and stock prices would grow at 3.5 percent per annum. Thus, PSEG was selling at an anticipated return (dividend yield plus growth) of approximately 10 percent.

In early September 1974, AA new issue bond yields were close to 10.5 percent. Bonds of somewhat greater risk such as Public Service yielded close to 12 percent. Consequently, one would expect anticipated stock returns would have to rise to 13 percent or more for lower quality stocks in order to induce investors to hold these relatively riskier instruments. Moreover, a survey of Wall Street analysts indicated that no longer was Public Service expected to grow at 3.5 percent per year. The expectation during the fall of 1974 was that PSEG would have essentially zero long-term growth. Consequently, the common stock of PSEG had to fall sufficiently to produce a dividend return high enough to induce investors to hold it. In fact, this is precisely what happened. In

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figure with reinvestment reflects the opportunity to apply dividends to the purchase of shares during a prolonged period of depressed share prices that occurred after the start of the period and to reap the advantage of the recovery of such prices when the bear market ended. Conversely, if one is reinvesting dividends at considerably higher prices than at the start of the period, then return with reinvestment of dividends will be lower. For example, for the period of 1945-65, the Fisher-Lorie number with reinvestment is 16 percent versus 17 percent without reinvesting dividends.

[43] In the twenty most recent business cycles (through 1970) common stock prices have preceded changes in gross national product on the average by four months. Lorie and Hamilton, **The Stock Market**, p. 21.

Rate of Return: Nominal and Real (percentage rates are annual averages, compounded annually, for periods indicated)

Number of Market Cycles	Total Period Years	Common Stock Market Cycles	Com. Stocks S & P 500		Long Term Bonds (Aa)		90 Days T. Bills		Inflation Rate CPI
			Nom.	Real	Nom.	Real	Nom.	Real	
		Low-to-Low							
1	4	May '70 - Oct '74	-0.1	-6.5	0.2	-6.2	5.7	-0.7	6.4
2	8-	Oct '66 - "	-0.2	-5.8	-2.1	-7.7	5.7	0.1	5.6
3	12	Jun '62 - "	4.3	0.0	-1.9	-6.2	5.0	0.7	4.3
4	17-	Oct '57 - "	5.8	2.3	0.8	-2.7	4.4	0.9	3.5
4½	21	Sep '53 - "	8.2	5.2	1.3	-1.7	3.9	0.9	3.0
5	25	Jun '49 - "	9.9	6.9	0.7	-2.3	3.5	0.5	3.0
		High-to-High							
1	4	Nov '68 - Jan '73	5.7	1.0	5.4	0.7	5.5	0.8	4.7
2	7	Feb '66 - "	6.9	2.7	1.3	-2.9	5.2	1.0	4.2
3	11	Dec '61 - "	7.9	4.7	2.4	-0.8	4.5	1.3	3.2
4	16+	Aug '56 - "	8.9	6.1	3.0	0.2	4.0	1.2	2.8
4½	20	Jan '53 - "	11.5	9.1	2.8	0.4	3.5	1.1	2.4
5	26+	May '46 - "	11.5	8.3	2.2	-1.0	2.9	-0.3	3.2
The Golden Era:									
		High-to-High							
2½	13	Jan '53 - Feb '66	14.0	12.6	2.2	0.8	2.6	1.2	1.4
The Periods of Real Disillusionment:									
		Low-to-Low							
1	4-	Oct '66 - May '70	1.8	-2.7	-2.0	-6.5	5.7	1.2	4.5
		High-to-Low							
1½	4+	Feb '66 - May '70	-3.6	-8.0	-1.9	-6.3	5.5	1.1	4.4
2½	8+	Feb '66 - Oct '74	-2.0	-7.4	-2.9	-8.3	5.6	0.2	5.4

Source: George M. Lingua, Senior Vice President. First National City Bank.

Cumulative results to this date were calculated from each market cycle low going back twenty-five years to the 1949 low. The Standard & Poor's 500 (Composite) is used as the proxy for common stock returns, for an amount of investment in place at the start of each period, with dividends and interest treated as reinvested at market price levels and interest rates obtainable when received. The nominal average rates of return (inclusive, of course, of market appreciation of depreciation) for common stocks along with the average rates of inflation are expressed as compound annual rates for the respective periods indicated. The bond returns were calculated by assuming that the coupon interest was reinvested every six months in new bonds of the same quality. Returns were adjusted for market values of the bonds at the end of the periods being measured.

October 1974, the dividend yield for Public Service was nearly 15 percent.

Compensating Investors for the Equity Risk

The Public Service case illustrates our view that in time the market will adjust to compensate investors for accepting the higher risk of holding stocks rather than fixed-income securities. Although present conditions may now induce investors to ask a higher premium than in the past as a reward for owning stocks rather than bonds, there is a price level at which the market will have fallen sufficiently to provide once more the returns necessary to make equities compare favorably with alternative investments. Moreover, it is possible that the economy has now adjusted to the severe problems of recent years and that corrective forces are at work to make the future brighter. A resurgence of corporate profits, coupled with moderating inflation, would, of course, stimulate an upturn in stock values. In any case, it is this kind of judgment about the future on which investment policy must be based.

Non-U.S. Equity Investments

With the removal of the American restrictions on foreign investments, numerous institutional investors are seriously considering, or actually laying the groundwork for, international investment.

Rationale for International Diversification

There are two major reasons for considering the diversification of a portfolio into foreign equity markets: the potential for an improved rate of return by investing in stable economies that may be growing faster than the United States' economy and the potential for less volatile performance of the whole portfolio by diversifying into foreign markets with a different pattern of price movements from that of the United States' markets.[44]

Differential Growth

As the American economy matures, the opportunity for gains in productivity and the maintenance of historical growth rates may become increasingly difficult. Politically stable foreign countries may offer prospects of higher growth rates of industrial production than the United States; these in turn are likely to be reflected in future stock prices. The table of Real Annual Compound Growth Rates of Industrialized Production on the following page indicates that this has been the case for the past two decades.

The current differential in growth rates between the United States and many of the more advanced industrialized nations is undoubtedly smaller than shown in the table, in part because other economies are increasingly mature. The capital markets of foreign countries that have yet to reach a mature rate of growth are likely to

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[44] For articles generally favoring international diversification see Bruno Solnik, 'Why Not Diversify Internationally Rather than Domestically?' **Financial Analysts Journal**, vol. 30, no. 4, July-August 1974, pp. 48-54; Gary L. Bergstrom, 'A New Route to Higher Returns and Lower Risks,' **The Journal of Portfolio Management**, vol. 2, no. 1, Fall 1975, pp. 30-8.

Real Annual Compound Growth Rates of Industrial Production: 1952-1972 (in percentages)

Japan	13.0	Canada	5.7
Netherlands	7.4	Sweden	5.0
Italy	7.3	Mexico	4.8
Germany	6.7	U.S.A.	4.1
France	6.2	United Kingdom	3.2

Based on Industrial Production Indices of IMF International Financial Statistics, various issues.

Intercountry Correlation Coefficients with the United States (S & P 425) (Correlation coefficients derived from market indices during December 1962 to December 1972.)[45]

Australia	.41	Germany	.51
Belgium	.74	Japan	.01
Canada	.81	Netherlands	.71
France	.06	United Kingdom	.52

Source: 'Rates of Return on International Investment Media over Selected Time Periods and Implications for Portfolio Construction.' First National City Bank Investment Department, July 1973.

be primitive, and greater political or foreign exchange risks may be associated with investment in such countries. Moreover, it should be noted that a U.S. investor can gain some of the benefits of higher growth rates in other countries by investing in multinational companies.

Possible Risk Reduction through Diversification

Independent of the benefits that may be gained from higher growth rates in other countries, international diversification may provide an opportunity to reduce the risk level of the portfolio if prices in foreign markets move independently of prices in the American market. As the table on this page shows, this has been the historical pattern but it may be changing as the countries' economies become interdependent.

The impact of major international events, such as the oil crisis, affects virtually all of the world markets, although the nature and extent of the impact may vary somewhat from country to country. The issue for investors is whether

[45] Correlation coefficients are a statistical measure that indicate how closely the movements in one index are related to another index. Correlation coefficients range from -1 to +1. +1 would mean 100 percent related whereas -1 means 100 percent inversely related. 0 would mean no relation at all. A correlation coefficient of .74 (as in the case of Belgium above) means that 55 percent ($.74^2$) of the movement of the Belgium market index is 'accounted' for by a move in the U.S. market.

the capital markets of the United States and other industrialized countries are now moving in the same basic direction or will continue to be somewhat independent. Many analysts have noted that movements in the economies of major industrialized nations may be far more synchronized in the future than in the past. If price movements are highly correlated, then there is little to be gained from international diversification in terms of reducing the risk of the portfolio. If the world's capital markets tend to move consistently in the same direction (even if at different rates) then diversification among such markets will not result in any greater risk reduction than would the purchase of U.S. securities of lower volatility. Moreover, even if national markets were not synchronized, changing exchange rates could offset differences in market performance.

Drawbacks

The potential advantages of international diversification of the portfolio need to be weighed against the following drawbacks:

1 Risks of international exchange rate fluctuations. These risks might be partially mitigated in a university's case by library acquisitions or other expenditures abroad. Thus portfolio earnings overseas, to the extent they occurred in the same countries in which a university spent funds, could serve as a hedge against exchange rate movements which adversely affect the purchasing power of the dollar.

2 Adverse taxes and government restrictions in this country and in others. For instance, most foreign countries impose a withholding tax on dividends and interest earned by foreign investors. A nonprofit investor may find it difficult to avoid the imposition of such taxes and the return from overseas investments would have to be sufficient to compensate for such taxes.[46] Also, although the interest equalization tax and credit restraint guidelines have been removed by the United States Government, they are examples of the kind of government restrictions that could be reimposed and have a heavy impact on investment strategies.

3 The lack of liquidity in foreign markets. The table opposite shows that the United States market represents 55 percent of all publicly traded equity capital or more than the rest of the world combined. When one looks at individual company capitalizations, the point can be made even more forcefully. For example, in 1972 the capitalization of the fourth largest firm in the Netherlands was about $500 million. This company would have ranked eighth in France and three hundred and fifty ninth in the United States. France's largest firm was under $1 billion which would have placed one hundred and sixtieth in the United States, while IBM, the largest in the U.S., totaled

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[46] A nonprofit investor who cannot offset foreign withholding taxes against U.S. income taxes may be able to avoid such taxes by setting up a nonprofit entity abroad which receives the return from investments in foreign countries and expends such funds abroad.

Market Capitalizations: 1 June 1974

	(Billion Dollars)	Percent of Total
United States	$ 617	55
Japan	146	13
United Kingdom	78	7
Canada	54	5
Germany	47	4
Spain	37	3
France	30	3
Australia	26	2
Italy	17	2
Switzerland	15	1
Netherlands	13.1	1
Belgium	9.6	1
Hong Kong	9.3	1
Sweden, Singapore, Denmark, Norway, and Austria combined	19.5	2
Total on list	$1,118.5	100

Data from Capital International 'Perspective,' June 1974

over $46 billion in 1972. Trading volumes for some companies are sometimes a higher percentage of total capitalization but are still usually much smaller than the United States' markets. This lack of liquidity suggests that a large commitment of corporate stock abroad might very well be a long-term commitment. A reversal of a wrong decision could require substantial discounts to get out.

Modes of Entry

There are basically three ways in which an American institutional portfolio could attempt to diversify internationally:

1 A university could buy shares in an offshore mutual fund or commingled trust fund whose stated objective is international diversification. There are some closed-end investment companies which invest exclusively in foreign equities and whose shares are available at substantial discounts from their asset values. (In former years such funds sold at large premiums.)

2 A U.S. advisory firm could be retained that has an established expertise in foreign securities.

3 A university could select a foreign money manager with expertise in markets other than the United States.

As noted earlier, there is evidence that stock prices in different countries have been negatively correlated (i.e., have moved in oppositive directions) in the past. But there are increasing indications that the major international economies are extremely closely tied together. We would not be surprised if, in the future, the parallelism among the major foreign and U.S. markets was much greater than it has been in the past.

Given the uncertainties of this investment field plus the current difficulties in the world economy, it might be premature to initiate a program of international diversification. But it is worth keeping an eye on this market to see if the price movements in different markets continue to be somewhat independent, to ascertain if liquidity in foreign markets improves, and to determine if the relatively high growth rates of foreign economies continue.

Fixed-Income Investments

Most universities invest some portion of their endowments in fixed-income securities. Over the years following World War II, the trend was to increase the percentage of the endowment fund committed to equities and to reduce the investment in long-term bonds. The recent and severe bear markets have now impelled most institutional investors to reassess the stock-bond mix.

Risks and Rewards from Investment in Fixed-Income Securities

Bonds have generally provided lower rates of return but more safety than common stocks. The prices of long-term bonds fluctuate with interest rates. In any one year, long-term bonds can lose 10 to 15 percent of their value, and over several years of secularly falling bond prices drops of 25 to 30 percent are possible. Nevertheless, over the long pull, fluctuations in bond rates of return (including interest and capital changes) have tended to be considerably smaller than corresponding fluctuations in equities.

The table on page 65 presents figures on long-run rates of return for long-term bonds and for common stocks. The table, as well as many other studies, show that over most of a wide variety of periods the returns from stocks have exceeded those from bonds.[47]

Rates of return also vary among bonds of different quality or risk level. For example, rates of return are generally higher on bonds rated BAA than on riskless government or AAA corporate obligations. In addition, the spread varies over time, with interest rates fluctuating much further on obligations of lower quality. When rates rise, the yields on bonds of lower quality tend to rise further. This accentuates the risk level in holding obligations of lower quality. Thus, just as for equities, there appears to be a clear relationship between risk and rate of return.

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[47] See also the Fisher and Lorie studies of common stock performance from 1925 to 1965; the Fisher and Weil bond performance analysis from 1925 to 1969; **Funds for the Future**, pp. 92-5, 97-102.

Bonds and Inflation

Many investors will have nothing to do with bonds because they have proved to offer no protection against inflation over the past several decades. Since World War II, prices in the United States have risen at the rate of nearly 4 percent per year, whereas bond yields at the end of World War II were only 2.5 percent on government issues and no more than 3 percent on corporate bonds of high quality. Thus, such investments actually provided a negative real long-run rate of return over the following decades.

It is well to remember, however, that from the beginning of World War II through 1951 bond yields were pegged at artificially low levels by the United States Treasury and the Federal Reserve System. Only during the 1950s was the market freed from controls and allowed to adjust to levels that reflect the free interplay of the forces of supply and demand. It is wrong, therefore, to say that bonds now offer no protection against inflation.

One reason nominal interest rates are relatively high at the present time is that investors now recognize the danger of continued inflation, and high interest rates in part compensate for the expected loss in the purchasing power of the dollar. In early 1974, long-term bonds of good quality promised a money yield of approximately 8.5 percent. Perhaps 3 percent was the real rate of return anticipated (the rate of return in constant purchasing power), and the extra 5.5 percent represented protection against inflation. Later in the year, when the inflation rate went into the double-digit range, rates on bonds of prime quality went to 10 percent and even higher. This provided protection for a long-run inflation rate of 7 percent or more.

The point is not that bonds now necessarily provide adequate inflation protection; it is always possible that the actual long-run rate of inflation may be considerably greater than current bond yields. But bond yields may now better compensate investors for expected inflation than at any time in recent experience. Thus, trustees may not wish automatically to write long-term bonds off as a useful vehicle for the investment of endowment funds just because investors have had bad experiences with them in the past when interest rates were pegged at unrealistically low levels. Such securities may offer today an opportunity to diversify a university's portfolio, thereby lowering its overall risk level without sacrificing the ability to earn a reasonable nominal rate of return.

Nonmarketable Investments

From time to time, university endowments have been invested in some form of asset or security that cannot be readily purchased or sold in an organized market such as that which exists for the trading of stocks and bonds. In making such investments, the institution aims for a higher return than stocks or bonds offer, accepting the higher risk and associated lack of liquidity of such investments.

The current condition of the economy has sharply affected opportunities in the field of nonmarketable investments.

The Impact of Current Conditions on Venture Capital

Profit from venture capital financing, or, more precisely, investment in newly developing companies whose securities are not yet publicly traded, is dependent on bringing such companies' stocks to the public market or being able to sell the interest to another company at a higher price than the investor paid for it. (Historically, the public market has provided a higher price for investors than sales to other companies.) Thus to the extent that the venture capitalist has an eye on a public offering or the shares of the acquiring company, such form of financing does not really offer a variant market from the public securities markets.

In our interviews in the summer of 1974, we found that firms experienced in such financing believed that, because of economic conditions, it was not productive to invest in start-up situations or young companies, particularly given the difficulty of bringing out a public offering of the venture's shares in the depressed market. But some maintained that the climate offered opportunities to buy control positions in established businesses at attractive prices where investment value rested not on stock prices set in an organized market but on a business's underlying earning power and control over its dividend payments and cash flow.

In short, such a strategy is an attempt to capitalize on the problems others are encountering in the current economy. We are not in a position to evaluate the extent to which such situations may exist. However, any such strategy would require a very specialized expertise not only in diagnosing genuine opportunities but also in being able to supply the active leadership and support such businesses often require.

Equity Investment in Real Estate

The largest field of nonmarketable investments is undoubtedly real estate; indeed, a study by the Ford Foundation describes real estate as one of the nation's largest capital markets. Our focus here is on the characteristics of equity investment in real estate. Equity investment in real estate offers the possibility of earning both current cash flows (or yield) as well as the potential for capital appreciation. Real estate mortgages with long-term fixed interest rates and amortization schedules are more akin to fixed-income bonds. Today, marketable fixed-income bonds appear to offer higher returns at lower risk than long-term mortgage

The case for equity investment in real estate appears to rest on four principal propositions:

1 Equity investment in real estate will produce higher returns than investment in common stocks.

2 The price movements of real estate investments are not highly correlated with the stock market and thus offer an opportunity for risk reduction through diversification.

3 Leveraged equity investment in real estate is an inflation hedge.

4 Real estate investments are less risky than common stock returns because they are supported by 'intrinsic values.'

In seeking to verify, qualify, or dispute these propositions, we found that the only available evidence was the anecdotal and impressionistic judgments of investors and real estate professionals. Careful studies bearing on these critical points do not appear to exist yet. (Undoubtedly, this is a reflection, in part, of the fact that real estate is essentially a non-standard, localized business.) Thus, we offer here largely our own intuitive sense about the advantages and disadvantages of real estate investing. We have tried to present a balanced picture though we are obviously writing at a time when, to put it gently, the supporters of real estate among the investment fraternity have thinned out a bit as a result of their recent experiences.

The Imperfect Nature of the Market: Investment in real estate businesses means participation in a much more imperfect market than the market for common stocks and bonds. Real estate investment can encompass not merely the purchase of land but participation in a multitude of varying and distinct businesses (viz, residences, shopping centers, office buildings, hotels, industrial parks, etc.) situated in different geographical locations with discrete market conditions. Real estate transactions, being widely dispersed, are heavily influenced by the local supply-demand situation for the particular type of property. Even within cities, market conditions can differ. For example, one suburb could have a strong demand for apartments while another suburb of the same city could be overbuilt. The chances of a project's success are largely dependent on location, the capabilities of the developer and property manager, the quality of the design and its other amenities, local environmental requirements, community receptivity, and so forth. To discern and evaluate these factors requires specialized expertise and experience and, even then, there is an ample chance that judgments will prove to be erroneous. But in contrast to the relatively efficient market for stocks and bonds, the ability and information to appraise any particular real estate venture is not possessed by a mass of analysts. Although there may be a loans secured by real estate, at least in the absence of equity kickers of some sort.

For a time some investors have regarded investing in real estate investment trusts (REITs) as a way of participating in the benefits of real estate and also of retaining the advantages of owning a readily marketable security. REITs are vehicles that raise money largely through public security offerings for investment in real estate properties, either in the form of equity or debt. A distinction must be drawn between so-called mortgage trusts and equity trusts. The former invests in fixed-income obligations and should not really be considered a form of real estate investing. Such companies are much like other financial intermediaries whose fortunes are tied closely to movements in short- and long-term interest rates. Indeed, one of the basic problems with the mortgage REITs is that they were caught with long-term assets and short-term borrowings during a time when the general level of rates rose sharply. In particular, REITs that engaged in essentially construction lending encountered difficulties because they had not arranged permanent takeout financing and could not obtain it in the current climate. Even where such financing had been arranged, some REITs engaged in construction financing still found it difficult to obtain funds because they could not satisfy the terms of such financing under the conditions prevailing. Thus, REITs oriented toward construction lending may have been the hardest hit of all.

Some investors feel that the problem with mortgage REITs goes far beyond the problems of rising borrowing costs. As one executive of an insurance company that actively invests in real estate put it:

> *The current problems in the real estate field seem to be two-tiered. Old-time mortgage lenders like banks, insurance companies, and the savings institutions certainly have more trouble loans than in past years, but the problem is nothing compared to the REITs. They suffered, as I see it, from growing too fast. There are many long-term relationships built up between builders and lenders. The REITs could not displace these long-term relationships significantly and, with all the money they had, were forced to make loans to the second- and third-grade builders and on second- and third-rate properties.*

Equity trusts that purchase equity interests in real property do provide a method of investing in real estate while retaining a marketable security holding. In our view, however, the real value of such holdings over time will reflect the quality of the underlying investments more than general stock market conditions and thus we believe the same expertise is required to select investments in equity REITs as to invest directly in real estate.

hundred or so security analysts able to appraise the worth of Bethlehem Steel's common stock, it is unlikely there are more than a few individuals who are available to appraise and bid on any particular piece of property placed on the market for sale.

Moreover, in the case of common stocks, it is just as easy to buy IBM if one is located in San Francisco, Denver, or New York City. In real estate, the evaluation has to be done on a local basis. There is really no substitute for personal inspection. In addition, a real estate transaction is far more complicated to execute than the purchase of stock, with an array of legal, financial, marketing, and other experts required to consummate a deal. All of these factors eliminate most individuals and many institutions from the real estate market. Thus, there may be a limited number of investors who can organize the array of skills necessary to identify particular projects in particular localities whose returns will exceed those of many other real estate properties.

Illiquidity: The lack of liquidity in real estate is the other side of the coin to the advantages that certain investors may be able to derive from the imperfect nature of the real estate market. By 'illiquidity' one means that, as a rule, broad markets of buyers do not stand ready to purchase real estate (or to refinance it); therefore, equity investments in such properties cannot be as readily liquidated as publicly traded common stocks. And, of course, it can be very difficult to liquidate losses. Illiquidity also entails opportunity costs. New investment opportunities cannot be exploited as fast if investment funds are locked into assets which cannot be readily sold.

A corollary to illiquidity is the difficulty of valuing real estate investments in the absence of a bona fide offer by a third party; short of this, the investment must be carried on one's books at either an appraised value or by estimating a capitalization rate for the income stream, viz., the price an arms-length buyer would pay for the future stream of income. This system can produce somewhat illusory valuations. (Of course, it can also be argued that in the case of large holdings of some stocks the price at which shares are shown to be traded may be significantly higher than the price one can realize on the value of such holdings.)

Profit Potential: As noted, there is no adequate comprehensive data describing the *average* past price behavior of real estate investments comparable to the available data about the past price behavior of stocks and bonds.

In the absence of such data, one turns to the best available informed opinion to get an impressionistic sense of the profit potential from equity investment in well-selected real estate. In March of 1973, a group of economists and leading authorities on real estate, convened by the Ford Foundation, agreed that a long-term average annual total return of 10 percent to 12 percent was a reasonable expectation from direct investment in real estate which enjoys the benefit of high debt leverage.[48] Our own inquiries indicate many experts in real estate agree that the estimates of the Ford conference are reasonable, although they caution that if investment is confined to existing properties producing an assured flow, the returns may not be as high as the cited figure. (Warnings were also expressed that the heavy tax orientation of real estate deals can distort comparisons with other investments.)

The potential of equity investment in real estate to generate higher rates of return than common stocks is generally believed to stem primarily from the high loan-to-value ratios, at fixed interest rates, that lenders have historically accepted for real estate. Ratios of two-thirds, three-quarters, and even higher have been common in the past, mainly due to rapid appreciation of value following the original equity investment. A high loan-to-value ratio implies that even a modest extra return on the value of a total property over the mortgage financing rate causes a substantial percentage return on the far smaller equity. Some persons we consulted felt that the amount of leverage available for future real estate investments will be scaled back and that such investments will be less than they have been. Others maintained that although loan-to-value ratios may be cut back, sufficient long-term financing at fixed rates will continue to be available to provide attractive leverage for equity investments in real estate.

It should be noted, of course, that if it is the availability of leverage that accounts for the higher return of real estate equity investments relative to common stocks, then it could be argued that on a risk-adjusted basis the two forms of investment might offer equivalent returns.[49] At the same time, some investors we consulted maintain that real estate does provide better returns than stocks, even on a risk-adjusted basis. The gist of their position is that real estate, unlike stocks, is a highly inefficient market and thus certain investors, who have a combination of the financial resources and expertise to investigate individual situations, can identify particular investments that will outperform the market on a risk-adjusted basis. In short, their argument is that in the inefficient real estate market superior selections of individual investments on a sustained basis are possible.

Real Estate as an Inflation Hedge: The limited data available on general real estate price movements raise a question whether the average real estate investment has been an especially good inflation hedge in the post-World War II period compared to common stocks.

[48] Return expectations for all classes of projects probably now have to be adjusted upward to reflect the impact of inflation and the higher yields available on bonds of high quality.

[49] Theoretically, it is possible to leverage a stock portfolio by financing purchases through debt and thereby to increase return if one is willing to accept a riskier, or more volatile, portfolio. A non-profit investor, however, should examine whether income financed in this manner may be subject to federal unrelated-business tax.

However, whatever one may conclude about real estate on the average from the sparse data available, there is general agreement that specific real estate investments can provide an effective hedge against inflation provided that they can be structured: (a) to put the investor in a leveraged position with a fixed-interest-rate loan and (b) to enable the investor to pass on inflation in costs related to the investment. As noted earlier, real estate developments are characteristically designed with a high percentage of long-term debt with fixed interest rates. Historically, those in a net-debtor position benefit most from inflation that is unanticipated by the *lender* since loans are repaid with dollars of less value than those borrowed originally. Of course, the greater the leverage, the greater the downside risk. At the 1974-75 level of interest rates, leverage is not always considered attractive as it imposes a heavy debt service burden on the cash flow of projects. Clearly, as interest rates more accurately reflect the likely rate of inflation, the advantages of a debtor position are reduced.

In addition to leveraging a project at fixed and reasonable interest rates, the ability to raise rents and leases along with or faster than the general price level or the increase in operating costs (if these prove to be above average for real estate) is critical to the utility of real estate as an inflation hedge. Retail leases with a fixed minimum plus a percentage of total gross sales provide one example of an automatic escalation provision.

All real estate is not, however, a sure inflation hedge. Where space is leased on a long-term basis, without escalation provisions to permit increases in operating costs to be passed on or for rentals to be adjusted upwards, real estate is unlikely to serve as an inflation hedge. Residential units subject to rent controls have also proved unattractive investments. Moreover, even where there are no legal constraints on raising rents to keep pace with inflation, market conditions can be a problem. In a local market suffering from a surfeit of all types of space from offices to hotel rooms, it has proved impossible to negotiate for higher rents when renting a hotel room, an office, or a store site in a shopping center.

Current Climate for Real Estate Investment: The general economic conditions, coupled with special factors relating to real estate, suggest that new development projects have been particularly risky to initiate in recent times because of:

1 High Interest Rates. Real estate development is especially sensitive to interest changes since interest payments constitute a large part of the total annual cost for real estate projects. Rising interest rates tend to reduce real estate development activity (while falling rates tend to stimulate it).

As noted, for the last few years mortgage money for real estate has been expensive and hard to obtain.

2 Cost Inflation. The impact of demand and inflation on new real estate construction has been particularly severe; labor rates and material costs have risen rapidly and production bottlenecks have, in some periods, led to shortages of critical building materials. The result is that project construction costs have tended to exceed estimates by substantial amounts. At the same time, the cost of property services and taxes have also risen sharply.

3 New Sources of Capital and Excess Supply. A tremendous volume of debt and equity capital flowed into real estate between mid-1970 and 1973. This caused a vast expansion of the real estate supply in almost all markets from office and retail space to apartments and condominiums. Some of these properties are of questionable economic value but were built because debt financing was available on reasonable terms.

It is often said that builders have appeared to build when financing is available rather than in response to established market demand. In effect, they have tended to either ignore, or have found it difficult to forecast, the demand-supply relationship. Many builders have found it relatively easy to calculate demand but either have overlooked or found it hard to assess the supply side of the equation, particularly given the long lead times involved in developing a real estate venture. The result has been an over-building relative to available supply and demand in many sections of the country. In addition, the majority of projects was financed with very high debt-to-value ratios because lenders were anxious to place steadily increasing funds in use. Now property owners find it difficult to raise rents to keep pace with cost inflation because the supply of competitive structures has expanded so rapidly. For owners carrying heavy fixed-debt loads on their investments, the current situation may pose a real threat of economic failure.

4 The Impact of the Recession. Developers and builders have also fared poorly in the 1974-75 recession because many of their projects have taken longer to rent than anticipated and at the same time they have had to carry large inventories of land. Hence, even though they may have portfolios of profitable properties they have found themselves in an overall cash bind. Others, as we noted, have found that the recession has softened the anticipated demand for space and made it impossible to raise rents as rapidly as costs escalated.

5 Community Resistance. The rising local resistance to new growth in suburban and nonmetropolitan areas is a major problem for new developments, whereas, conversely, it is likely to benefit existing properties. In the face of

such resistance, the cost of new development and the time it takes to complete a project will inescapably rise.

6 Opportunities in Existing Properties. All these factors inevitably lead some investors to have genuine reservations about any *current* strategy of investing in *new* real estate projects. However, the very factors that may inhibit an institution from investing in new real estate ventures may provide attractive opportunities for investing in existing properties available at less than replacement costs. Eventually in a free market (barring a wide-spread imposition of controls) owners will be able to raise rents to provide sufficiently attractive returns on leveraged investments as over-supply in market areas is absorbed. Existing properties should enjoy a genuine competitive advantage in such a market over new projects that will have to be financed at higher construction costs. Indeed the availability of existing properties at less than replacement costs may further attract funds from being committed to new ventures.

Since we originally wrote this in 1974 investment in new properties may be becoming more attractive. As the head of investments at one major insurance company wrote us in 1975:

> *On balance, I would tend to agree with the comment about this being a better time to buy existing properties rather than going into new ventures. However, I think the pendulum could swing the other way shortly. As we see the market currently, most of the existing properties that are in trouble fall into two categories. Some properties will never be any good and regardless of price are no bargain. In the other group are properties that are in foreclosure or have been foreclosed by the lenders. These lenders can take the long-term viewpoint and are not disposing of properties at distress prices. A year or so ago, developers who were in serious financial difficulty were selling everything in order to maintain solvency. Most of them have either gone broke or have nothing left to sell.*
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> *At the same time costs of construction have declined. Contractors are willing to work for little or no profit, materials are plentiful, and in some cases at prices below a couple of years ago, and finally interest rates are down. Therefore, the cost of construction today is in some cases probably less than the amount of mortgage on a building that was completed a couple of years ago. In some cities of the country there are beginning to be signs of office space shortages. And if the recovery should be strong enough, there could be*

real shortages a couple of years from now.

7 The Long-Term Thrust of Real Estate Values. Although the immediate prospects for new real estate projects may be debatable, it is expected that improved land will tend to rise in value over the long term. A growing population in the context of a rising gross national product exerts an upward pressure on real estate values producing an element of capital appreciation in real estate investments. In the future, the combination of a growing population and higher incomes should sustain a continually expanding demand for more land use.[50] This suggests that over the long term the current yield from real estate investments will be supplemented by a basic, though cyclical, upward movement of real estate prices.

Possible Investment Strategies: Most persons with whom we discussed this issue suggest that an institution should have at least twenty-five million dollars available for investing in real estate in order to achieve a properly balanced program (although it should avoid any commitment to move specific amounts of funds within a predetermined period of time). Even twenty-five million equity dollars, however, is a relatively small pool of funds to achieve appropriate diversification in this field and it must, in any event, be managed by highly specialized persons. (Indeed a lesser commitment by a large portfolio might have too small an impact on the overall investment return to justify the effort involved.) How then does one find a vehicle for making investments in real estate, particularly one that will insulate a university from the risk of being required to step into the management of properties in areas remote from the campus region if some ventures founder? There appear to be two basic options for obtaining the necessary expertise and management skill to make equity investments in real estate:

1 One may invest in commingled funds managed by an experienced institutional investor. Here one gets the benefit of a much larger pool of resources as well as the scale of expertise that is normally available to a large pool of capital. At the same time, one must relinquish control over the way commingled funds are invested and thus one may not be able to achieve the selectivity one wants in investing in real estate in today's market. For example, should one decide to limit investment to existing properties that are being sold under distress conditions, the fund in which one invests may or may not be committed to such a strategy. More importantly, the valuation of the properties in the pool that determines the price at which an investor could buy in is somewhat arbitrary and always open to question.

2 One may select a firm to act as a general advisor to the trus-

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[50] For projections of the future of land use, see 'Use of Land: A Task Force Report' (Sponsored by the Rockefeller Brothers Fund, 1973), pp. 75-88.

tees to make investments in accordance with the specific strategy determined by the trustees. The advisor could be given full discretion to make investments within the guidelines established by the trustees or could be limited to recommending investments to the trustees. The firm, for example, could under policies established by the trustees invest in packages of existing properties, finance selected developers of new projects,[51] participate with other institutions in one of the above, or purchase interests in REITs. Such trusts may, at times, provide investors with an opportunity to purchase real estate at prices below the market values of the properties held by the trusts. During 1975, for example, many equity REITs could be purchased at substantial discounts below the estimated market values of the trust assets. Depending on how good the estimates are of the real values of the properties held by the trust, such investment opportunities could be attractive.

The fees charged by the firms rendering general advice are harder to categorize since there are relatively few such firms and each arrangement is negotiated on a case-by-case basis.

One important risk in employing an advisory firm is the possibility that the advisor, if servicing more than one client, may not be able to apportion some opportunities among all the accounts. Moreover, by working with an advisor one may not be able to participate with a larger pool of capital and thus not be able to diversify sufficiently one's investments in the real estate field. Also the portfolio might be exposed to becoming the sole overseer of the management of a venture should it founder. However, a skilled advisor should be able to work out situations in which one participates with other like-minded institutions who have similar investment objectives in order to mitigate such risks.

Special Situations

The major alternatives for the investment of an endowment are equities, fixed-income securities, and nonmarketable investments. However, often special situations exist that may give trustees the opportunity to increase the yield on the endowment without increasing its risk. These opportunities can arise from temporary imperfections or new developments in the market. The following two special situations illustrate such investment opportunities.

Closed-End Investment Companies

From time to time, the shares of closed-end investment companies have been available at a substantial discount from their asset values. Discounts in 1974 were extremely large by historical standards. These funds generally hold well-diversified portfolios of standard stocks. Even if their portfolios do only as well as the general market averages, and as long as the discounts do not increase further, an investor can earn more than the market return simply because of the large discounts available. This is so because dividends are earned on the full market value of the fund, whereas the investor buys in at a discount. If the discounts on the funds become smaller after they are bought, as, in fact, they are guaranteed to do for some funds that have provisions for future liquidation, then an investor will enjoy the gain from the narrowing of the discount as well as any appreciation in the value of the underlying assets. We believe that investment in closed-end companies, when available at substantial discounts, may be a particularly useful strategy for improving the marginal return of the portfolio.

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[51] Financing developers of new projects is obviously riskier than purchasing existing properties, but it is also likelier, if successful, to produce higher returns. In the case of a new development, care must be taken in selecting a developer and in choosing an expert with the competence to monitor the development. Nevertheless the ownership of existing properties is not necessarily free of management problems.

Writing Options

Recent changes in the options business has created an investment alternative through which institutions may be able to lower portfolio volatility while not reducing (and perhaps improving) total return. A program of selling call options against owned securities (so-called covered option writing) offers this possibility.[52]

A call option is a contract which guarantees its holder the right to buy 100 shares of a stock at a predetermined price ('striking price') for a specified period of time (any time prior to the 'expiration date'). There are three basic approaches to writing (or selling) options. Fully covered writing is selling the option to buy securities only when you own 100 percent of the securities. Naked options writing involves the selling of an option to buy stocks that are not owned. The third strategy is that of a partially hedged writing program; as the name implies it is a middle ground whereby the writer owns a portion of the shares which he options. It is covered option writing that the United States Comptroller of the Currency has approved for national banks and numerous state insurance departments have approved for companies under this regulation.

The creation of the Chicago Board of Options Exchange (CBOE) in April 1973 rendered option writing a useful, and increasingly widespread, investment alternative for institutions. The CBOE, now joined by the American and Philadelphia-Washington-Baltimore Stock Exchanges, standardized the option contract and created a continuous auction market for that contract. This market enables an institution to buy back an option written previously thereby allowing an option-writing program to operate with little or no interference with the management of the equity portfolio. With the ability to write covered options on an organized exchange, a growing number of institutions have entered the options field.

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[52] A number of studies have been published in recent years about options. Among them are: Burton G. Malkiel and Richard E. Quandt, **Strategies and Rational Decisions in the Securities Options Market** (Boston: MIT Press, 1969); Max G. Ansbacher, **The New Options Market** (Boston: Walker and Company, 1975).

The primary advantage of a covered option-writing program is that it can produce a more stable rate of return than that of the underlying equity portfolio. The reason for this stems from the nature of the stock option. By selling an option on the stock, the option writer is forfeiting a portion of potential appreciation in the stock price for a guaranteed pre-paid premium income. On the other hand, the premium income earned from an option represents a cushion against any capital loss in the security in the event of a market decline. In the volatile markets of the last few years, an options program would have been an effective method of smoothing a portfolio's return.

Because organized option markets are only two and one-half years old, it is impossible to make a meaningful projection of an expected long-term rate of return from an option-writing program. Overall, in the long run, the profitability of an option-writing program will be determined by the size of options premiums relative to the actual volatility of the underlying securities. If, over the long term, option buyers are bullish or risk loving, and, on average, pay more for options than is justified by the average subsequent stock price appreciation then the total rate of return of an option-writing program should be greater than a comparable unoptioned portfolio. Of course, market conditions will greatly affect returns. An option portfolio is likely to outperform an equity portfolio in moderately rising markets or almost certainly will do so in flat or falling markets. However, a few periods of sharp market rises could more than offset the gains from such periods.

It may be possible with experience and careful evaluation to establish guidelines which assist in identifying the conditions under which selling options are likely to be profitable. Furthermore, some analysts believe there may be regular and predictable inefficiencies in the option market in certain categories of options. For example, it could be that option buyers generally are willing to pay more for options whose striking price is well above the current stock price or, it might be found, for example, that option buyers, on average, are willing to pay disproportionately more for a one-month option than a six-month option. As experience is developed in the as yet maturing option market, such inefficiencies, if they exist, may be discovered and progressively disappear.

There is no consensus among experienced option writers as to what constitutes a reasonable expected long-term rate of return. Some believe the gross rate of return is equal to the rate that can be earned by simply owning common stocks but after transactions costs and tax effects, the net rate of return is marginally lower. Others believe that an option-writing program can produce a substantially better rate of return. But there appears to be general agreement among those who have engaged in option writing that a properly executed sustained option-writing program can reduce the risk level of a portfolio. It should also be noted, however, that, at the present time, the premium income from unexercised options is considered to be unrelated-business income and therefore subject to income tax.

Unless the option portfolio is totally separated from the equity portfolio, the relationship of the equity manager to the option manager (if they are different people) and the measurement of the performances of the two managers are two important issues that need to be addressed by the investor. A covered option-writing program involves the ownership of stock and therefore could require either explicit or implicit judgments about near-term stock price movements. Therefore, the interaction, both in terms of informal investment strategy discussions and structured guidelines defining under what circumstances options can be written or exercised, must be carefully considered. The question of performance measurement flows from this issue. For example, if an equity manager can have stocks called away from him, how can his performance be judged? Correspondingly, if an option manager is confined to the securities that an equity manager has bought for long-term appreciation, the option manager is being constrained.